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ABSTRACT

The welcome and reasons for the meeting, presented by Mr. William T. Knox is followed by these papers: (1) Copyright in Its Historical and Philosophic Setting by Miss Barbara Ringer; (2) Copyright and Standard Reference Data Publications by Dr. Ed Brady; (3) Copyright Revision - Issues and Interests by Mrs. Bella Linden: (4) Court of Claims and Copyright Infringement Remedies by Mr. Alan Latman; (5) CATU, Information and Communications Policy by Herbert J. Schlafly; (6) a Proposal for the Protection of Computer Software by Mr. Elmer W. Galbi; (7) Providing Access to Information in Machine Readable Forms - Part 1 by Mr. Fred Ensley and Part 2 by Dr. Eugene Garfield; (8) Cooperating with Government by Mr. Jeffrey Norton and (9) Cooperating with Non-Profit Associations by Mr. Norton Goodwin. The papers were presented in approximately the form in which they appear here. The publication of the proceedings of the Airlie House meeting of the Information Industry Association (IIA) on copyright and related protections for information age products is intended as a working document of the Association. (NH)

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COPYRIGHT AND RELATED PROTECTIONS
FOR
INFORMATION AGE PRODUCTS

PROCEEDINGS
and
Related Documents
of the
Meeting of the
INFORMATION INDUSTRY ASSOCIATION
held at
Airlie House, Virginia
on
July 18 & 19, 1969

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COPYRIGHT AND RELATED PROTECTIONS
for
INFORMATION AGE PRODUCTS

A MEETING of the

INFORMATION INDUSTRY ASSOCIATION

held at

Airlie House, Virginia
July 18 & 19, 1969

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INFORMATION INDUSTRY ASSOCIATION WORKING PAPER WITH FEEDBACK

The publication of the proceedings of the Airlie House meeting of the IIA on Copyright and Related Protections for Information Age Products is intended as a working document of the Association.

The papers reproduced in its 99 pages following the introduction were presented in approximately the form in which they appear here. Some were taken from the prepared text where it contained a fuller statement and others were transcribed from a tape recording of the meeting. Irving Kahn, President of TelePrompTer, was unable to deliver the luncheon address, due to an emergency hospitilization. "Hub" Schlafly did an admirable job, on short notice, of translating Mr. Kahn's unique presentation into his own. The text of the proposal presented by Elmer Galbi is the Proposal For Protecting Computer Programs as it then (July 1969) stood. Some modifications have since been made, but for purposes of the integrity of these proceedings thetext reprinted herein is the basic document from which Mr. Galbi made his presentation.

In order to facilitate the use of this as a working paper, wide margins have been provided, for note making and other purposes. In addition as Appendix II to the introduction we have included duplicate copies of a "Feedback Form". It offers a mechanism through which further dialogue on these issues can proceed.

Users of this working paper, members and non-members alike, are encouraged to participate in developing wider understanding of these issues by submitting questions and comments to IIA Washington on these "Feedback Forms"

IIA Washington will, in turn, be pleased to forward comments and questions to the person you designate and to share your views with appropriate committees. Your participation is actively invited.

Suggestions for use of Feedback Form:

PAGE NUMBER ----	Identify the page at which you have a question or comment.
PERSON ADDRESSED ---	List the person(s), perhaps a speaker or other participant, or others, to whom you would like to address your question or comment.
QUESTION/COMMENT ---	Space is provided for you to state a brief question. If additional space is needed, please use extra paper.

May 1, 1970

A WORD . . .

about the meeting,

these proceedings, and

their continuing effect . . .

A day and evening were spent exploring these issues. The IIA convened a business meeting the following morning at which time it adopted the following resolution:

> The INFORMATION INDUSTRY ASSOCIATION, mindful of its unique responsibilities as an association of creators, generators, processors and vendors of information products and services, as well as manufacturers and suppliers of information related devices and services, and interested professionals in the field, in considering the relationship between proprietary rights and the optimal use of information in the public interest,
>
> RESOLVES that proprietary rights associated with the various information technologies and products are, as a fundamental principle, not only compatible with the widest dissemination and use of information, but essential thereto, and
>
> FURTHER RESOLVES that, since the new information technologies may require extensions of or perhaps different legal concepts from those which heretofore have served the general welfare, a national commission should be established to study, not only new technological uses of copyrighted works, but also, more broadly, the impact of these new technologies on the optimal development and use of proprietary information products and services, and to recommend appropriate legislation.

A primary concern of the Association members during the discussion of the resolution was Title II of S. 543, the Copyright Revision bill, then pending before the Senate Judiciary Subcommittee. Following the Airlie House meeting, of which the following proceedings are part, the Proprietary Rights Committee of the IIA submitted to that Senate Committee proposed changes in the language of Title II. By letter of September 23, 1969, Mr. Thomas C. Brennan, on behalf of the Senate Judiciary Committee's subcommittee on Patents and Copyright circulated the proposed changes to other parties interested in the legislation.

(A comparison of the provisions of (1) the relevant sections of Title II as introduced in the 91st Congress, (2) the comparable sections in the IIA proposal, and (3) the language of Title II as reported from Subcommittee appears in Appendix I to this introduction.)

Although the proposal of the IIA came late in the long history of the revision effort, it did receive prompt and thorough consideration by these other interests. More that a dozen comments were received by the Sub-committee.

THE CIRCULATION OF THE IIA PROPOSAL SERVED TO VENTILATE BASIC ISSUES INVOLVED IN TITLE II essentially for the first time! The changes written into Title II by the Sub-Committee seem to reflect the pattern of ideas developed from this interchange.

All of the comments cannot be included in this introduction, but the objectives of the IIA might better be understood in the context of several points made in comments to the committee on the proposal:

o Several comments underscored the newness of the concept of the information industry. One major force in the revision effort objected to a separate category for information industry representatives on the proposed Commission "since the information industry is made up of copyright owners and producers of copyrighted works." Another contending group of interests interposed the objection to separate representation for the information industry on the Commission on the grounds that "the creators of information systems and manufacturers of machines and mechanisms are predominantly users."

What is revealed in this exchange is the fact that the information industry cannot be classified in terms that reflect gutenberg (ink-print) techniques for delivering published materials.

The information industry recognizes the need for a modern, up-to-date copyright law appropriate to traditional publishing media. Its primary concern, however, is the need to identify and develop a mechanism comparable to copyright relevant and responsive to the problems of marketing access to information through the application of advance information techniques and technologies. In the process of creating and marketing post-gutenberg information products and services some types of creations might be considered writings and hence copyrightable, some might be considered to be inventions and hence patentable and some might be considered to be neither, but still worthy of some kind of definable proprietary interest.

In the view of IIA members, IT IS THIS SET OF EVOLVING ISSUES ABOUT WHICH THE WORK OF THE COMMISSION WILL CENTER! And for the resolution of this set of issues, the information industry has unique experience to bring to bear.

o One comment addressed to IIA Washington from a computer hardware viewpoint registered opposition partly on the grounds that "your proposals open the scope of inquiry to computer-created works, which may or may not encompass an entirely new set of problems possibly beyond the scope of the Commission as originally envisaged."

Another stated the view that, "the Commission would be empowered to study an entirely new subject - the creation of new works by automatic systems or machine reproduction."

Another acknowledged that a significant change offered by the IIA suggestion "would add to the scope of the Commission's activities, the creation of new works by the application or intervention of automatic information storage and retrieval systems."

Indeed, the specific inclusion of this set of issues within the mandate to the Commission will enable it to include this essential element in the long-term resolution of the problems society and the industry face in the information age within its study. Much of the discussion contained in these proceedings underscores this point.

o Several comments were made on the merits of proposed changes in the membership and makeup of the Commission. In the light of the Sub-Committee version of Title II, it is unnecessary to review the various positions taken on the question of the chairmanship of the Commission and its Congressional representation. It should be apparent that a basic objective of the Sub-Committee is to create a Commission that is workable in size.

The location of the Commission within the Library of Congress and the presence of both the Librarian of Congress and the ex-officio status of the Register of Copyright, it must be recognized, builds into the Commission a copyright bias, ab initio. The practical consequence of this may be to impose on the Commission the inappropriate burden of dealing with any and all unresolved copyright issues, whether or not the Revision bill passes coincidentally.

The two other officials to be included on an ex-officio basis in the IIA proposal, The President's Science Advisor (Director of the Office of Science and Technology) and the Chairman of the Federal Communications Commission commented to the IIA in different veins. The Science Advsior suggested it might be inappropriate for him to serve, even in an ex officio capacity, on a commission whose report he would be called upon to evaluate for the President. The Chairman of the FCC expressed interest in serving on the Commission in an ex-officio capacity in view of the close correlation between information and communication policy.

This meeting and the extended dialogue it developed over Title II has helped identify crucial issues. The search for a a viable alternative to copyright better suited to the problems and potentialities of information age products and services has just begun. The search, if it is to be successful, must be in terms of such products and services and the closely related systems for delivering information.

Your participation is most welcome.
P.G.Z.

For further insights into the nature and makeup of the information industry see also:

ADDRESSED CABLE DELIVERY, the IIA filing with the Federal Communications Commission in Docket No. 18397, its inquiry into the future configuration of information services to the home, school and office, and

INFO-EXPO '70 PROGRAM/PROFILE, the National Meeting publication of the IIA including detailed profiles of first year members of the Information Industry Association.

Each of these working papers of the IIA is available for a publication processing charge of $5.00 (prepaid) to cover cost of handling and mailing. (D. C. residents add 4% sales tax)

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APPENDIX I
Part B
SUB-COMMITTEE PRINT
of Title II, S. 543

TITLE II - NATIONAL COMMISSION ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS

Establishment and Purpose of Commission

Sec. 201. (a) There is hereby created in the Library of Congress a National Commission on New Technological Uses of Copyrighted Works (hereafter called the Commission).

(b) The purpose of the Commission is to study and compile data on:

(1) the reproduction and use of copyrighted works of authorship --

(A) in conjunction with automatic systems capable of storing, processing, retrieving, and transferring information, and

(B) by various forms of machine reproduction, not including reproduction by or at the request of instructors for use in face-to-face teaching activities; and

(2) the creation of new works by the application or intervention of such automatic systems or machine reproduction.

(c) The Commission shall make recommendations as to such changes in copyright law or procedures that may be necessary to assure for such purposes access to copyrighted works and to provide recognition of the rights of copyright owners.

MEMBERSHIP OF THE COMMISSION

Sec. 202 (a) The Commission shall be composed of thirteen voting members, appointed as follows:

(1) Four members, to be appointed by the President, selected from authors and other copyright owners;

(2) Four members, to be appointed by the President, selected from users of copyrighted works;

(3) Four nongovernmental members to be appointed by the President selected from the public generally;

(4) The Librarian of Congress.

(b) The President shall appint a Chairman, and a Vice Chairman, who shall act as Chairman in the absence or disability of the Chairman or in the event of a vacancy in that office, from among the four members selected from the public generally, as provided by clause (3) of subsection (a). The Register of Copyrights shall serve _ex officio_ as a nonvoting member of the Commission.

APPENDIX I
Part A
ORIGINAL LANGUAGE
Title II, S. 543

TITLE II - NATIONAL COMMISSION ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS

Establishment and Purpose of Commission

Sec. 201. (a) There is hereby created in the Library of Congress a National Commission on New Technological Uses of Copyrighted Works (hereafter called the Commission).

(b) The purpose of the Commission is to study and compile data on the reproduction and use of copyrighted works of authorship

(1) in automatic systems capable of storing, processing, retrieving, and transferring information, and

(2) by various forms of machine reproduction.

The Commission shall make recommendations as to such changes in copyright law or procedures that may be necessary to assure for such purposes access to copyrighted works, and to provide recognition of the rights of copyright owners.

MEMBERSHIP OF THE COMMISSION

Sec. 202. (a) The Commission shall be composed of twenty-three members, appointed as follows:

(1) A Chairman, who shall be the Librarian of Congress;

(2) Two Members of the Senate to be appointed by the President of the Senate;

(3) Two members of the House of Representatives, to be appointed by the Speaker of the House of Representatives;

(4) Seven Members, to be appointed by the President, with the advice and consent of the Senate, selected from authors and other copyright owners;

(5) Seven Members, to be appointed by the President, with the advice and consent of the Senate, selected from users of copyrighted works;

(6) Four nongovernmental members to be appointed by the President, with the advice and consent of the Senate, selected from the public generally.

(b) The members of the Commission shall appoint by the vote of a plurality of the total membership, a Vice Chairman who shall act as Chairman in the absence or disability of the Chairman, or in the event of a vacancy in that office. The Register of Copyrights shall serve as an ex officio member of the Commission.

APPENDIX I
Part C
IIA PROPOSED LANGUAGE
in Title II, S. 543

TITLE II -- NATIONAL COMMISSION ON EFFECTS OF ADVANCED TECHNOLOGIES ON WORKS OF AUTHORSHIP.

Establishment and Purposes of Commission.

Sec. 201. (a) There is hereby created in the Library of Congress a National Commission on the effects of Advanced Technologies on Works of Authorship (hereafter called the Commission).

(b) the purposes of this Commission are to study and compile data

(1) on the reproduction and use of copyrightable works of authorship

(A) in automatic systems capable of storing, processing, retrieving, and transferring information and

(B) by various forms of machine reproduction.

(2) on the creation of new works by the application or intervention of such automatic systems or machine reproduction, and

(3) on the effects such reproduction, use and creation are having on the accessibility of such works and the proprietary rights therein. The Commission shall make recommendations as to such changes in law or procedures that may be necessary to assure access to works, of authorship and otherwise, and to provide recognition of the proprietary rights of owners.

MEMBERSHIP OF THE COMMISSION

Sec. 202. (a) The Commission shall be compose of twenty-one members, appointed as follows:

(1) A Chairman, to be appointed by the President with the advice and consent of the Senate.

(2) Five members, to be appointed by the President with the advice and consent of the Senate, selected from authors and other copyright owners.

(3) Five members, to be appointed by the President, with the advice and consent of the Senate, selected from users of copyrighted works and information.

(4) Five members, to be appointed by the President, with the advice and consent of the Senate, selected from creators of information systems, products, mechanisms and services.

(5) Five nongovernmental members to be appointed by the President, with the advice and consent of the Senate, selected from the public generally.

(b) The members of the Commission shall appoint by the vote of a plurality of the total membership, a Vice Chairman who shall act as Chairman in the absence or disability of the Chairman, or in the event of a vacancy in that office. The Librarian of Congress, the Register of Copyright, the President's Science Advisor and the Chairman of the Federal Communications Commission shall serve as *ex officio* members of the Commission.

APPENDIX II

FEEDBACK FORM

Page No. ________ Person Addressed ______________________________

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WELCOME AND THE REASONS FOR THIS MEETING

Mr. William T. Knox - Ladies and gentlemen, I'd like to call this meeting to order. Its a little after nine o'clock. Paul had me scheduled to give some introductory remarks to fill in the time until the bus from National Airport with some more participants arrives this morning. Those of you who have already arrived will get this trailer.

On behalf of the members of the Information Industry Association, I'd like to welcome those non-members who traveled through some blistering heat yesterday to this meeting. If you don't mind this rather worn pun, it's certainly symbolic of the fact that this is a hot topic.

And on behalf of the Board of Directors of the Association, I want to say how stimulating it is to us to find such strong support from the member firms for this -- our first effort to probe into the significant issues that confront the information industry. As everybody realizes this kind of support is especially needed in these days of our infancy. I urge you to let Paul know what other issues you think we should address in a similar fashion.

Issues shouldn't be hard to find. Copyright and computers and other related issues have taken the place of theology as the center of all kinds of abstruse arguments these days. Instead of counting angels dancing on the head of a pin, we now argue about whether it's copyrighted input or output, and whether a change from analog to digital electronic signals constitutes a translation or a version or just a plain copy or whether it's none of them in copyright terms. I'm having difficulties with the jargon myself. Two bits still, to me, means my week's allowance.

Just a brief word about the background of IIA for some of you who are here for the first time with us, and some of you who are actually our guests and visitors today. It goes back to about 1964 when there was a great deal of attention paid at the policy levels in the Federal Government and in some non-governmental organizations concerned with the need for better systems for generating, disseminating, and utilizing the information that was being poured out in such vast quantities from our expanded research and development effort. I went to Washington in those days to try to help, as best I could, to conceive and begin the construction of a more effective array of mechanisms that would do a more effective and a more efficient job of getting the information from those who have it to those who need it on an economic basis.

It was rather easy for me, operating sort of as chief honcho in this area to the President's Science Advisor, to find a group which represented the business equipment manufacturers. They had a trade association. It was easy to find a group representing the non-profit abstracting and indexing services. They had a national federation of abstracting and indexing services. It was easy to find library associations, which are primary elements in the various information systems. It was even easy to find groups of the professional user community, represented, for example, through the professional societies, and also through the National Academy of Sciences and the National Academy of Engineering. The book publishers had their association, but they were concerned only about books. The magazine publishers were concerned about magazines.

You could just go on down the line. Everybody was concerned about either a specific product line or a specific equipment line. No one was taking an over-all look at the kind of information industry that was rather clearly being born at that time, and which today is a few years older. We can see more clearly now the dimensions of it.

It is an industry that performs some of the same functions that some of the more traditional industries did, that is, to be the mediator between the information, those who produce it and those who need it. It is an industry which is an active mediator, not just a passive intermediary. Some of us could see the need for a similar trade organization serving the interests of those firms in the for-profit area which were especially involved in using the new technologies to serve this mediating function. Not the rotary printing press necessarily, although certainly not ruling it out; not using simply the broadcasting system although certainly not ruling that out; but the group of entrepreneurs who were looking at any and all media, and all kinds of information products and services.

So the IIA was conceived back in those days. Somewhat tentatively in the years since 1964 a number of firms have expressed considerable interest in such a trade association. Finally in November of last year, after a number of preliminary meetings, the Association was incorporated.

Its purposes (and I'll read from the proposed charter revision) are:

1. To serve as the association of the information industry, which includes but not by way of limitation, firms engaged in the commercial creation, supply and marketing of information products and services to and for specific audiences as well as for the general public.

2. To develop and advance industry positions, (this is especially important as far as today's meeting is concerned) on how the public interest can best be served through systematic application of advanced technologies for storing, processing, accessing, and transferring information on a commercial basis.

3. To foster the improvement of general business conditions for those engaged in supplying information products and services for profit.

4. To formulate a public relations program which will inform the public as to the contributions and purposes of the industry.

5. To furnish leadership and cooperation with people and established agencies, associations and institutions which are all interested in applying the new technologies.

6. To serve as a forum for the intechange of ideas in this area.

7. To secure the resolution of problems common to the members of the association.

Now these are some of the purposes. We have already tried to furnish leadership and to inform the public as to the contributions and purposes of the information industry. I was privileged to give some testimony at the first authorization hearings for the National Science Foundation on April 1, in which I certainly plugged the virtues of the information industry. I pointed out it was an industry that had matured considerably since the National Science Foundation program had been initiated in 1958. They have up til now funded most of the development of new systems within the not-for-profit area, and I think the point got across very effectively.

Today we are going to be talking about some more issues that are of importance to the association. I might add that we must already be serving some purpose as judged by other people, because two trade associations in related areas have already approached us and indicated interest in either absorbing us or tying closely with us. As far as I'm concerned this reaction is confirmation of our judgment that the then-existing trade associations really did not serve a sufficiently broad spectrum of information interests. Just the fact that we have now proclaimed this need has, I think, waked up some people.

Now the purposes of this meeting are two: First, to begin our consideration of how best to serve both the interests of society and of our member firms with respect to proprietary rights in information, and secondly, to transact some business, such as modifying the by-laws and charter. This latter will take place tomorrow. The meeting is laid out in a way that will insure that we all have the same picture of what is happening. This tutorial and review is the first part of the meeting. Then we are going to discuss some specifics. Finally it will be followed this evening by rather detailed discussion and modification of a draft statement which Paul has put together.

Since he has now come back in let me point out on behalf of the Board our deep gratitude to Paul, who is our Executive Director. This meeting actually was his inspiration, and he has shed buckets of perspiration since to bring it off. And our thanks also to Mrs. Zurkowski who has the job of raising four rather youngish children while her husband works all hours for the IIA.

Now I want to close with these observations. This is a very timely meeting and the IIA will have to keep after this issue very diligently and forcefully.

The EDP Weekly has a story that's headed "Washington Tightens Its Grip on the Industry" and I would just point out a number of the areas in which they refer to Washington involvement. The Civil Aeronautics Board is now deciding to step in with the respect to the airline reservation system. Of course the FCC's computer communications inquiry you are familiar with. We have the Federal Trade Commission becoming much more interested in this whole area. Commissioner Mary Gardiner Jones has already agreed for me to stop in and see her next Wednesday; she would like to learn more about the IIA. We have the Internal Revenue consideration of the tax treatment of programing costs. We have the decision upon whether programs are copyrightable or patentable, the Prather and Wei case.

We have all kinds of other agency involvements; the Commerce department with respect to export of technical information; the National Bureau of Standards involvement with computer standardization and with a number of information programs; the Office of Education. I could go on and mention more.

Well, this just is confirmation, certainly, of our deep involvement with something that is an area that is moving very rapidly on a number of fronts. The CATV interests, an issue we will hear more about at lunch today from our guest speaker, is another example. Some of us also recently attended a meeting where University computing centers and extension centers were charting their course into the area of providing information services to the general public, our area.

The heat is on, and I'm convinced that IIA can serve its member firms very usefully. Unfortunately, with respect to the copyright issue the book and magazine industries have created a public image that they stand firmly and resolutely in the path of progress. Some of these same firms are now represented in the IIA and I hope that the IIA will project a more favorable image.

Our member firms already cover a wide range of interests, but the common thread that unites us is that we are trying to utilize all of the technologies that are available for information storage, retrieval and communication for the social welfare, at a profit, of course. Some of our member firms are almost exclusively based on the new technology. Others have one foot firmly grounded in the existing technology and practices, and the other foot gingerly feeling its way into the murky waters of the new technologies. This association, representing as it does both old and the new has unlimited potential for helping the Congress and other groups and organizations in the country to legislate and regulate and operate wisely and effectively on all of these matters. Whether it will succeed, of course, depends on the willingness and efforts of all of us. With that I am going to close these introductory remarks unless somebody wants to raise some questions.

Eugene Power - I want to say one thing, Bill. We all recognize the debt that we owe to Paul Zurkowski, but we also have to recognize the debt that we owe to you. You are the fellow responsible in many ways for the progress that has been made to date in the kind of association which we have and the place which it occupies. We don't realize it and I think we all should recognize this, because withoutyou we wouldn't have gotten there.

Mr. Knox - Thank you; unexpected, but appreciated. Our first speaker this morning is Miss Barbara Ringer. She will talk to us about copyright and its historic and philosophical aspects or setting to give us this common ground of understanding that I referred to a moment ago. She is a member of the District of Columbia Bar and Assistant Registrar of Copyrights for examining in the Copyright Office. She's a lawyer from Columbia University and is adjunct professor of law even now at Georgetown University. She's certainly one of the experts in this field, as witnessed by the fact that she's author of various monographs in this area as the Senate and House Committees on copyright and patents have over the last ten years examined practically every aspect of the problem. She has received the William A. Jump meritorious award for exemplary achievement in public administration. It's a great pleasure, Barbara, for us to have you here to open this first real work session of the IIA. Thank you.

COPYRIGHT IN ITS HISTORICAL AND PHILOSOPHIC SETTING

Mr. William T. Knox - For our first speaker this morning is Miss Barbara Ringer. She will talk to us about copyright and its historic and philosophical aspects or setting to give us this common ground of understanding that I referred to a moment ago. She is a member of the District of Columbia Bar and Assistant Register of Copyrights in the Copyright Office. She's a lawyer from Columbia University is adjunct professor of law even now at Georgetown University. She's certainly one of the experts in this field as witnessed by the fact that she's author of various monographs in this area as the Senate's and House Committees on copyright and patents have over the last ten years examined practically every aspect of the whole problem. She has received the William A. Jump meritorious award for exemplarary achievement in public administration as well as others. It's a great pleasure, Barbara, for us to have you here for you to open this first real work session of the IIA. Thank you.

Miss Ringer - Thank you very much, Bill. I am honored to be the first speaker at the opening business session of what promises to be one of the most significant organizations in this field. I certainly echo the thought that the development of an organization of this sort is badly needed,and I am given considerable hope by the attendance I see around the table that it will get off the ground.

What I have been asked to do this morning is to review the history and philosophy of copyright law. To give you any meaningful knowledge on this subject in half an hour is really impossible. So, rather than trying to go through a dull and uninformative consideration of the history of the copyright law and the various philosophical theories that have grown up around it, I'm going to try to stimulate some ideas. I would hope that the ideas will take the form of questions that we can kick around.

In planning this with Paul, he suggested that I speak for about 15 minutes and then break off and ask for questions. Then maybe I can use the last minutes of my allotted time to sum up the discussion, based on what the questions bring forth. I'd like to try it that way, but if you feel the need to ask any questions as I'm going along don't hesitate, because I haven't planned a formal speech.

I think that the most important question underlying all of today's discussions may well be: Why is copyright important? When I first came into this field twenty years ago most people who worked with copyrighted materials had never thought about the question and were not the least bit interested in it. This situation has changed, and it has changed partly because of the activities that you are devoted to.

In other words, I'm not sure I need to ask this question quite as forcefully as I would have fifteen or twenty years ago. But I still ask it, and I ask you to consider what would be the situation if there were no copyright laws at all. What would be the effect on the individual human beings who prepare the material that is copyrighted? What would be the effect upon the publishers and other organizations that disseminate them to the public? What would the government's role in the process of creation and dissemination?

If you try to analyze this question you come up with some rather interesting conclusions. First, an author who cannot expect to get what have come to be known as "royalties" or "residuals" from the continuing use of his work is going to be forced to make choices. Either he is going to write because he is so overwhelmingly motivated that he will make any sacrifice in order to express himself or he won't write at all unless he is paid as an employee.

Authors of the first kind are rare, but they exist in every society, regardless of the legal framework. There are dedicated heroes in every country who will write regardless of whether they are paid. Frequently their works are the most valuable culturally. But they are obviously not the meat and potatoes of the publishing and information industries.

The great majority of authors either have to have a certain degree of assurance that they will be remunerated one way or another or they aren't going to write at all. They'll go into another line of work. If they can't make a living on the basis of the kind of royalty system that has emerged under our present copyright law, they will take jobs in order to write. And if they take jobs, then they do what they are told.

Now look at the situation from the viewpoint of what is loosely known as "publishing" today. Suppose a publisher had no assurance that, as soon as he brought out a work, he could call upon the law to prevent anyone and everyone from "knocking it off," as they say in the design industries. Suppose that the investment he put into the development of the work could be freely appropriated by anyone who chose to do so, as soon as that work was made public. Obviously the patterns of publishing would change.

This is not to say that works wouldn't get published. They would. But the contents of the works and the form of their publication would, in my opinion, be quite different. This is where the government comes into the picture.

It is no revelation to say that the government is already pouring millions of dollars into projects involving this kind of creative endeavor. If the publisher cannot be assured of exclusive rights of some sort or another, if he cannot be assured that his competitors will not be able to take his successful works and use them in competition with him, then he will have to turn to the government as his exclusive source of revenue. On the basis of patterns that are already in existence and operating, it seems likely that the government would either have to insure the publisher's profits or buy him out. I think that this is something that we must consider in judging the importance of copyright and in considering the situation if there were no copyright at all.

What I'm coming up with is this: the alternative to copyright throughout the ages has been subsidy or patronage. I'm not saying that the copyright law has been the answer to freedom of expression and an open society. But I am saying that, in a situation in which authors and those who disseminate their works must go to some higher authority for the money to perform their functions, they will be controlled in what they write and disseminate. If a society is concerned about avoiding the consequences of this, it must either prevent it from happening in the first place or provide safety valves and safeguards to take the curse off of it.

On the basis of the history of the copyright law up to now, there seem to be two clearly discernible ratios. First, the level of a country's copyright protection is in direct ratio to the level of that country's cultural achievements. A country like Andorra or Lesotho doesn't need a copyright law because at the present time it has little or nothing of its own to protect against unauthorized use. Assuming you accept the concept of levels of culture at all, it follows that the higher a country's level of culture, the higher its degree of copyright protection.

The Western European countries, of which France is the leader, have been in the vanguard of copyright protection. There is cause and effect here. Obviously copyright laws are not the sole support of culture and culture is not the only reason for copyright laws, but there is an interrelationship that is undeniable.

Secondly, there is a direct ratio between forms of government and the extent of copyright control. The more totalitarian the government the less copyright is necessary or exists. The more direct the subsidy--the more the direction over the creative endeavors that are going on in the country--the less there is a need for individual, independent copyright control. And again this is a pattern which is consistent and undeniable.

If you can accept these premises at all, then I think you come to the hypothesis that,if you destory the authors' right to control the dissemination of his works directly, then you must provide a substitute for it or else you are going to affect the creation of new works directly. Leaving aside those few towering figures--the Solzhenitzyns, the Osip Mandelshtams, and so forth -- you are not going to get the Dashiell Hammetts, and probably not the Shakespeares and the Molieres, that go to make up a country's culture. They aren't going to write unless they get paid for it somehow. If the government takes over the job of inducing authorship directly, it may end up telling the author what to write and paying him for it only if he conforms.

I might add in passing that the copyright law of the Soviet Union is one of the most capitalistic statutes they have. It is partly because of their recognition of the individual nature of copyright, the personality that is involved in it, that this is true. Their patent law is also a somewhat different concession to the capitalistic system. I think this is of some interest to us.

Now how did copyright develop? Like most laws it developed as a pragmatic, practical response to felt needs at particular points in time. Apparently you can find references to protections of authors' rights in ancient Egypt. Mr. Krishnamurti, the Indian Registrar of Copyrights, has found references to it in the Sanscrit Vedas of 2500 B.C. There has been from the dawn of time recognition of an author's work being peculiarly his own, something that is deserving of protection. But this recognition was not the same thing as having the law step in and give the author the full weight of its power to control the uses of his works. This did not happen until the Renaissance, and it did not happen then merely because there was a flowering of culture. It happened because the printing press was invented.

Here again there were causes and effects operating in conjunction. But let's not underestimate the revolutionary effects of Gutenberg's invention. For the first time it became possible for an author's work to be reproduced and disseminated widely, beyond the sort of thing that had been done in the monastaries where monks were copying works in multiple copies for a very select audience. The limitations on the audience were removed for all intents and purposes.

With this development came a need for a copyright law to preserve the investment in talent, time, and money that the author and his disseminator had put into the work. It's interesting to observe the problems that Durer, for example, had with his engravings in the early 1500's. They were reproduced almost immediately and he went to the law to try and protect them. The troubles Cervantes had in protecting his works about a century later are equally fascinating.

If our culture is a product of the Renaissance, our jurisprudence is a product of the Anglo-Saxon common law. As a result, we are operating under a copyright law that in many respects is a direct result of the religious wars in the 16th and 17th centuries.

In the beginning copyright, as a formal legal system, was looked upon in England as a form of monopoly and as a form of censorship. The two are conjoined and there's no point in blinking at this fact. Forcing the publisher to get government approval as a condition for protection against "book pirates" was a convenient way to suppress freedom of thought. Control by the government over what is created and what is disseminated has been a theme in copyright law from the days of Mary Tudor.

Partly because of the peculiarities of English politics, and partly because of historical accidents, copyright philosophy has taken two divergent paths. In the Anglo-Saxon countries--the British Commonwealth and the United States--the general philosophy is that we are protecting the publisher as a businessman. We are linking copyrights with patents; we are making sure he gets his investment back and in that way inducing dissemination and the authorship on which it depends. This has resulted in an emphasis on monopoly and property in the conceptual thinking about copyright in the British Commonwealth countries and the United States.

The Anglo-Saxon theories of copyright contrast sharply with the philosophy that emerged in France and spread to other Western European and Francophone countries. There the author as an individual creator is the focal point of legal protection, and in some respects the author's rights are regarded as sacred. But, as Flannery O'Connor said, everything that rises must converge. Even though they started from different philosophical premises, the English-American copyright system and the French copyright have evolved into statutes that have many basic similarities. Since the practical needs have tended to be the same, the same legal answers have been found on a number of points.

On the other hand, these philosophical differences have had an effect on the status of authorship and the premises upon which changes in particular provisions of a copyright law are based. Whom are you trying to protect? The author? The publisher? The public? The government? A French legislator is likely to start from a different position from an American legislator on any issue involving the philosophy of copyright.

The historical accidents in England that I referred to were a series of court cases which, through a peculiar combination of circumstances, resulted in a basic philosophical theory still with us today. This is the theory that copyright is a privilege granted by the legislature to the author or his assignee, the publisher, and that, as a special privilege, it must be limited in time and must be no more extensive than is necessary to provide the incentive to create and disseminate.

This is almost 180 degrees removed from the French premise that copyright is a fundamental right of the author which should be limited only as much as is necessary in the interests of society. Before these English decisions in the late 18th century it had been assumed that authors had underlying common law rights which were not affected by the statutory rights granted by Parliament. In effect, the cases in England destroyed this theory. They held that common law and statutory rights cannot exist in a work at the same time; once a work is published all common law rights are cut off, and the only rights in the work are those the statute chooses to give it.

This principle has been imported into the United States and is now so engrained in our jurisprudence that it would take a major revolution to root it out. I'm not saying that this is right or wrong. I am saying that other countries starting with the same problems have dealt with the rights of authors in quite a different way.

One illustration of these differences is found in the first copyright law of the United States, which gave protection only to "maps, charts, and books." In that order.

The idea was to protect a publisher for practical reasons, and the practical reasons were that we needed a lot of maps and charts because we were a frontier country. We also needed books to show the rest of the world that we had a nationality of our own. The theme of aggressive nationalism recurs throughout the U.S. copyright literature of the 19th century. The rather holy attitude of the French toward the author was simply nonexistent.

What we are now operating under is a law that was enacted exactly 60 years ago, in 1909, and that was enacted on pragmatic 19th century premises. It is a direct product of the British origins refined by the practical demands of the industrial revolution of the 19th century. It was written at a time when the communications revolution as we know it had only begun to take affect. It was based primarily on hard copy, publication concepts. It gave little or no attention to the problems of performance and recording. The peculiar problems of motion pictures weren't even recognized in the 1909 law. I could go on in this vein at some length, but I think I might be infringing on Mrs. Linden's topic.

There is no doubt that ours is the most outdated copyright law in the world today. The copyright laws of the countries that have become independent since 1956 are more modern than ours. They are certainly more addressed to their particular needs than ours. In terms of recognizing the world as it exists today, ours is simply a 19th century statute. We are, as Mrs. Linden will tell you, in the process of a revision effort which in my opinion is the latest in the long series of pragmatic responses to felt needs.

In the legislative sphere, there has been no real philosophical rethinking of this problem anywhere since the 19th century. France, Germany, and the United Kingdom all passed new copyright laws in the 50's and 60's. These are not 19th century copyright laws, but they go only about half way through the 20th century. In no instance have they taken account of the problems you are coming to grips with here. They are based entirely on pre-computer technology and on the very practical day-to-day problems of land-based radio and television broadcasting, records, movies, and so forth. In a sense they are already out of date, even though in the German instance the new statute was only passed in the last couple of years.

What we need to think about now is a 21st century copyright law. But to get there we have got to pass through a 20th century copyright law. We can't just jump from one century over another one. In saying that the present revision is not what we will need in the 1990's and thereafter is not to say that we shouldn't enact it. We are in urgent need of a legislative foundation on which to build a copyright law for the new century, and the Act of 1909 does not provide that foundation.

Let me stop at this point and ask if there are any questions. Then before I quit I'd like to come back to the question of where copyright goes from here.

Mr. Knox - Thank you, Barbara. Let me just make a suggestion here. In asmuch as the coffee and hot water for tea or Sanka are being brought in now, instead of having a formal coffee break between 10:00 and 10:15, let's just go have a discussion. Anybody who wants to get some can get up and take a stretch simultaneously. Meantime we will continue to have questions to Barbara.

Barbara Ringer - Fine. I saw a hand over there.

Question - Barbara, I'd like to know what you think our copyright laws should be today if you personally were passing them and had no worries except what you think is philosophically the right and proper action.

Barbara Ringer - Your question is a theoretical one, because nobody in this country is or should be in that kind of position. But it is a question I've thought about. First of all, when you set out to bring the law into line with social, economic, and political developments, you don't just throw the past aside and start from scratch. My feeling is that, in trying to correct injustices and update anachronistic laws, legislators must take the utmost pains to insure that they don't substitute disorder for order and confusion for clarity.

Therefore, I'm not sure at this point that, if I had unlimited authority to change the copyright law, the result would be much different from the present revision bill, at least in the areas we're talking about. In legislating it is perhaps as important to conserve the foundations on which you are building as it is to anticipate what is going to happen in the next 50 years and try to conform the law to your own predictions. Nobody has that kind of foresight.

What I'm saying is, first of all, that statutory law has got to be allowed to evolve. On the other hand, there are periods in history when, because of circumstances, law makers do throw off the trappings of the past and move boldly into new areas. At the present time I do not think that this is possible or desirable in the field we are discussing. What I do think is that we should foresee that the time for new approaches will come, and help the law to evolve in these directions.

I would say that the importance of information in society, the quantitative dimensions of the problem, the complexity of the business relationships involved, and the proliferation of technology have all become so great that individual contractual licensing arrangements with respect to individual uses cannot continue indefinitely. I think that we will eventually get to the point where this kind of individual dealing becomes self-defeating for the owners of the literary property involved. Users will rather not use the work than bother with all the paperwork, or they will go ahead and use the work and worry about being sued later, if ever.

The long-range answer that seems to be emerging is compulsory licensing--that is, payment but little or no control as to use. Carried to its extreme, this system seems to me to put the individual author in terrible jeopardy. At that point he merely becomes a cog in a very large machine. And I would say on that score that we should take a hard close look at the French and other foreign systems that evolved from the basic premise that the individual author should be given as much protection as possible. We should try to discover whether ways can be found within a compulsory licensing framework of preserving artistic independence, of allowing people who don't want to be employees to continue to create independently, and of giving them access to media so that they are free to get their message across if they choose to do so.

Mr. Knox - Barbara, in the case of perhaps the large majority of firms here I think the interest is more toward those authors, those creators who are employees. How would you handle that situation? Do you see a big distinction?

Question - Can I just ask a question? I fail to see exactly the distinction between an employee and an individual author because from the standpoint of protection a company has employed a person. The Copyright principle at issue is pretty much the same, the need to protect the investment.

Mr. Knox - Well, that's good, he wants clarification of the difference and I wanted you to describe what you what you would do differently.

Barbara Ringer - As a matter of fact, your questions are pointing toward my concluding remarks.

Bill Knox - Would you like to go to your concluding remarks?

Barbara Ringer - No, I'll answer your question first, because you have given me a good opening. I know that the remarks I'm going to make are not going to be popular. The assumption you are operating under--that everybody who creates is going to be an employee--is exactly what is scaring me half to death, because it isn't necessarily going to be your companies who are going to be dictating what these employee-authors end up creating. It's going to be the people who are contracting with you. And if an author is foreclosed from going off to his cottage and writing as he sees fit, we are going to lose one of the foundations underlying our society.

I realize this may seem unrealistic to you in terms of information technology because you are thinking in terms of data and statistics and so forth. But I don't think this is a difference in kind; I think it's only a difference in degree. I see longrange trends, which your questions more or less confirm, that the free-lance independent author will simply have no market and that he will have to go and be employed by someone, whatever market he is writing for: a periodical audience, a fiction audience, an educational audience, a general discussion audience, or a computer audience. He will have to go to the people that control these media to get his directions and his salary. Maybe you will think that you will be able to maintain his independence for him, but I don't share that assurance.

Norton Goodwin - Barbara, I'm not sure the French idea is based on the integrity of preserving for the author the integrity of his works, that is not the concern to which you are addressing yourself now.

Barbara Ringer - Yes, it is.

Norton Goodwin - It is?

Barbara Ringer - Yes it is. Partly.

Norton Goodwin - Don't you think that there are ways of securing integrity by providing remedies?

Barbara Ringer - I do. Mr. Garfield had a comment, though, and I'll try to come back to that.

Eugene Garfield - Your last remark reminded me of the discussion that comes up with regard to what might happen to the great work of scientists living today. Who is the 20th century counterpart of Gregor Mendel? Now there has been more hogwash written on the notion that there exists throughout this world literally hundreds of unrecognized Gregor Mendels. Even in the case of Gregor Mendel the fact is that probably any disservice that was done to him was due to his own doing. He chose to live a certain way. Now, I think you have some kind of romanticized idea what a good free lance writer is today. He's the one that's calling the tune, not his boss, and the fact that he is a free lancer indicates his degree of freedom and he does go off to his cottage and gets paid very well for what he does even though it may be on a contract. So I think that with the notion the same parallel of ideas there may be some very talented writers somewhere hidden somehow who is going to be done in by us who employ him. I think that's what is in back of this same idea, this same kind of thing.

Barbara Ringer - Yes....

Earl Coleman - I'm not sure that's exactly what you had in mind. My belief would range something on the following line. The publisher is responsible to disseminate his work to control the dissemination of his work and to assure him of getting through what he has written. Now the problem lies it seems to me with the new technology advantage. Eventually it will be impossible to do these things unless we affect something about it now. It will be impossible to make certain that the publisher can continue to publish in essence as he is now situated. Without the encouraging of what we would call the publishers who will be exactly the kind of people you were talking about, Who will be AT&T, LDX, Xerox, whoever, that's who they will be. Will they in fact and I think this is your basic fear, will they in fact lead us toward freer dissemination of information? Answer, absolutely not, because they will have affected a monopoly of information. At some future time unless we take steps it will not be possible to get absolutely free access to that information. That's the problem.

Bill Knox - Barbara, may I ask a question? Do you see any likelihood that a copyright or proprietary right legislative base can be created which distinguishes between the conceptual humanistic creative activity and the more factual scientific engineering creative activity? It seems to me that this lumping the two together causes all kinds of difficulties in trying to arrive at a statutory base here.

Barbara Ringer - In some respects this is exactly the route that the French law has taken. It's been called a dualistic law, where you have economic rights and personal rights both recognized under the umbrella of copyright but treated quite differently. I didn't really come here to get into a big hassle, but I thought I'd try to stimulate your thinking, and I think I have done that. But if I do have a message, it's this. The sacrifices that copyright owners in general are going to have to make with respect to exclusivity over the control of their works are inevitable. They are going to happen regardless of any amount of planning, effort, or anything else. But the sacrifices in this area will need to be made up for by changes in the legal protection granted to authors qua individuals, or else we are going to have a legal framework in which freedom of expression is likely to be repressed. This is my best judgment. I could be wrong; my predictions are no better than yours.

Bill's question suggests that there is more than a theoretical possibility of providing a new form of protection to individual authors, and it seems to me that it would be constructive to think through the implications of this all the way.

Let me close so I won't run over my time. Some of what I was going to say I've already said, but I did want to single out four pressures that are being exerted on the copyright law now and that are going to change it. And if copyright law doesn't change, it's going to perish.

The first of the four pressures is the need for access. We have seen an enormous challenge in the copyright revision effort from a wide range of scholarly, scientific, academic, educational, non-profit interests who want the information that is clothed in the literary expression that is copyrighted. These pressures are irresistible. They have got to be met somehow. I might add that the same pressures exist in the area of international copyright from the developing countries, and there too they are irresistible. Unless you go forward in an effort to meet them, you get mowed down.

Second is the enormous complexity of the business dealings involved. The days when you could leisurely write contracts for little uses of a work and negotiate over them for a couple of months are past. People can't wait that long; there is too much paperwork and it's too involved and complex.

The third pressure is the increasing role of the government in this area, not only in funding research and development projects that produce "literary" works and the programs in which there is a demand for using them, but also in the over-all control of hardware, software, and everything else.

Finally, I'll go one step further with this question of artistic independence. I'm looking around. Is there anyone here under 30? Well, to tell you the truth, I'm surprised to see even two or three.

We have seen some pretty strong reactions to computers and what they are doing to our society among young people. I suspect that in another generation the "all-for-automation and automation-for-all" kind of thinking may be reevaluated. I do hope that the direction this takes is not in the sort of thinking I see to some extent--that you've got to have a revolution and the only way to do it is to submerge the individual in the collective. I would hope that the other, the countervailing and to me vastly healthier attitude--that our direction should be toward more individualism rather than less--will prevail in the next generation.

Norton Goodwin - You recognize this as a pressure toward recognition of the author's rights.

Barbara Ringer - Yes.

Norton Goodwin - It's a real pressure, in other words.

Barbara Ringer - I would say that there are hopeful signs, but there is nothing you can take for granted. Assuming that you accept the value of individual creativity, it needs all the nurturing you can give it.

Mort Goldberg - As I see that problem that you stated, Barbara, is the question of access. Access by users to material and access by the creator to the means of dissemination of the material. They have difficulty in getting access unless there is some centralized source which they can get the information and I think the problem as I read you, the problem that we will have as we get more and more centralization of the source, the data base, whatever, is that there will be a decline in the number of outlets, a decline in the number of means of dissemination that the author can use and the author can offer his materials to, the number of publishers, the number of markets, the number of license assistants, however you want to characterize it. I think the present decline will continue to decline and you get to the question of works which may not find a market because they are unpopular for political reasons or scientific reasons or other reasons it makes no difference.

I think that we have a problem on both sides--of the access by the author to the means of dissemination and the question of user having access to the means of dissemination for information.

Barbara Ringer - I just have one concluding remark. I'm glad to see the really quite imaginative thinking that's evidenced in your questions. I must say I'm confirmed in my fear, however, that you may be building a bridge on the River Kwai. The court decisions in copyright and allied fields lately seem to indicate a growing hostility to copyright protection. Part of the reason is this enormous dehumanization. By trying to reduce the human factor and merge it into some kind of corporate work--which obviously is the product of human minds but is still unidentifiable individually-- and by trying to take over the protection of authors and paying them what you think they deserve, you may be very industriously building your own funeral pyre. I think that you owe it to yourselves to question all of your assumptions on this subject, because the decisions you take in the next few years will probably have a lot to do with your future and that of the rest of the world. Thank you.

COPYRIGHT AND STANDARD REFERENCE DATA PUBLICATIONS

Dr. Ed Brady

MR. KNOX: We'll go next to a discussion of a very interesting innovation in government relations to copyright. We will hear from Dr. Ed Brady. One of the reasons we asked Ed to talk was because for the first time government, almost for the first time, government in this country has been given the right to take copyright in its publications. This was a long time coming, but it is now here and Ed Brady was very activ e in all of the negotiations leading up to it. At the present time Ed is associate director for information programs in the National Bureau of Standards. It is a recently created post to recognize Ed's special combination of talents I would say as well as in response to the growing need for the bureau to do a better job with the many information programs it has. He directs the activities of the Office of Standard Reference Data, the Clearing House for Federal, Scientific and Technical Information, The Office of Technical Information and Publications in the Bureau, the Library Division, the Office of Publice Information and the Office of International Relations. Ed's background is primarily in atomic energy with Oak Ridge and with GE. I would like to welcome Ed to the program.

DR. ED BRADY - Thank you very much, Bill. It's a great pleasure for me to be here today to discuss with this group the National Standard Reference System. As Bill knows very well personally this has been the focus of my thoughts and attention for several years now. · All of you know, I am sure that National Bureau of Standards is an experimental laboratory operated by the Federal government as part of the Department of Commerce. It is an experimental laboratory in which many experiments are done in physical sciences and engineering throughout the lboratory but also we do experiements in other kinds of ways. This National Standard Reference Data System is an experiment on part of the U. S. government in the development of a systematic way of handling a certain small portion of scientific and technical information that is now available. For the purposes of this meeting it serves as a case history of the forces within the U. S. government that led the Congress to paths of law giving the Secretary of Commerce the right to obtain copyright in the products of the Standard Reference Data System. It's an experiment in interagency cooperation in the development of a scientific information system and patterns of government dissemination of information. The industries represented in this audience also have a part to play in this experiment. In our work in the past we have had discussions with representatives of a number of the firms represented here and we look forward to a continuing discussion with this entire industry.

This morning, now, I'd like to tell you what the National Standard Reference Data System (NSRDS) is, why the

Department of Commerce requested legislation to aid the operation of this system and then describe to some extent what the consequences and implications of this legislation are.

First, then, the NSRDS. The word DATA has lots of meanings and probably almost as many meanings as there are people who use the word. In our usage, it has a very specific meaning. Data in our terminology means the results of measurements of the chemical and physical properties of substances. It is information of a sort that is well defined and relates to a well-defined substance so that we really know what we are talking about. It does not include the large mass of miscellaneous information that ordinarily is thought of when the word data is used. The NSRDS is operated as a coordinated network of information analysis centers and related activities that primarily produce compilations of citically evaluated data on the properties of substances and critical reviews of the state of quantative knowledge about some carefully defined aspect of physical science. These centers also produce some intermediate products along the way. Some of these are bibliographies or indexed or annotated bibliographies. We also produce state of the art reviews which are descriptive reviews written by someone about what he has observed. Uncritical data compilations also are occasionally produced. But the prime objective is the production of these critically evaluated compilations of data.

The National Bureau of Standards has a responsibility for coordinating this network and for providing funds for the activities that need additional funding or for new activities that need to be established. This in a sense is a descendant of the international critical tables which was completed in the early 1930s after a world wide effort lasting more than 10 years.

Now there is nothing new about data compilations being produced by the scientists and engineers throughout the world. These are a normal tool of the research and development process. Traditionally, the productions of these kinds of products was dependent on the dedicated individuals that Miss Ringer just mentioned a few moments ago. The financial motive has been relatively minor in all cases. Indeed, the individual scientists who contributed to the international critical tables were not paid for their contribution, and in many cases it cost them a good deal of money out of their own pocket. Because of these traditional ways of producing these compilations it was found a number of years ago that the rate of production of new data appearing in the literature was increasing very much more rapdily than the effort devoted to extrating these data from the raw literature, having them critically evaluated by a specialist and then compiling and disseminating them.

Because of the urgent needs in some fields for these kinds of data compilations to improve the efficiency of the reasearch and development process it was decided by the Federal Council for Science and Technology that a government wide effort needed to be undertaken. The National Bureau of Standards which had been active in this kind of work throughout its whole histroy and, indeed the compilation of data is mentioned as one of the specific functions in the organic act of the NBS, was requested to take the lead in organizing and administering this government wide effort. The producers then of these data compilations within the NSRDS you see are employees of the U. S. government. This is a force within the community that led employees producing things which in the past had been traditionally carried on by non-employees.

QUESTION - When you say producing, however, you mean compiling, not actually developing the data?

DR. BRADY - Not doing the experimental work themselves but the search of the literature and the evaluation of the data found within the literature and the production of a compilation. That is the scope of the program, not the actual measurement within the laboratory. To summarize, then, the basic objective of the NSRDS is to provide the compilations of data and the critical reviews that the research and development process in the U. S. need to work efficiently. The action that was taken by the Federal Council occured in 1963. Since that date we have been attempting to develop this nationwide network of information analysis centers. We were already a struggling little organization when Bill Knox joined OST and we struggled all the time he was in his office and we are still struggling.

After a few years of operation we found that there were two principle non-scientific problems connected with the operation. One is the usual problem of not enough money to do everything that we felt needed to be done. The second problem was that we felt we were not getting good enough distribution of our products through the government publishing system primarily through the Government Printing Office and the Superintendent of Documents.

The proposed solution within the Department of Commerce was to seek legislation to give the Department and by delegation, the NBS additional authorities that would improve our capability of running the program. This legislation was intended to obtain congressional recognition that the activity was a necessary and desireable part of the government function and to give the Secretary of Commerce a directive to carry on the activity. One of the basic objectives also was to authorize the administrators of the program to work with commercial distributors of information in order to improve the efficiency of our distribution.

We consider that our principle function is to get these products in the hands of the individual scientists or engineers who need them and to do this as efficiently and smoothly as possible. Now hopefully these basic objectives were to be promoted in the legislation that was submitted to the Congress. Hearings before the House and Senate were held in 1966 and we had extremely interesting sessions with both the House and the Senate. The objective of the SRD program was supported by the entire technical community. We had representatives from the National Academy of Science, from other government agencies, from individuals in the academic community and we even had representatives from the publishing industry, including Bill Knox, supporting the objectives of the program. I want to emphasize that it was the objectives of the program that were unanimously endorsed and not all the provisions of the legislation that were submitted. There were some provisions that were not liked by anyone. One provision in the original legislation specifically exempted this program, not the National Bureau of Standards in general, but this program from the provisions of Title 44 which require the application of the very complex printing and publishing regulations of the government. There was another provision in the orignal bill that contained a prohibition against copying the products of the system. That original prohibition against copying as it was submitted in its initial form to the Congress turned out to be unconstitutional, and as it was pointed out by somebody from the Library of Congress eventually both of these provisions were deleted from the final bill. We are in this program subject to the provisions of Title 44 and, instead of having a prohibition against copying, it was agreed that the Secretary of Commerce should be allowed to obtain copyright on the publications and other products of the NSFDS. This bill was passed in the 90th Congress, just last year, approximately a year ago in 1968.

The basic provisions of the bill as finally passed were these: It stated that it was a policy of the Congress of the United States to make critically evaluated reference data readily available to scientists, engineers and the general public. The Secretary of Commerce was authorized and directed to provide or to arrange for the provision of the compilation, evaluation and dissemination of standard reference data. The Secretary was authorized to make available either himself or through an agent, standard reference data and to sell these data at a price that may reflect the cost of collection, compilation, evaluation, publication and dissemination (that is a direct quote) and then finally to the extent practicable and appropriate. You see that that's permissive and interpretable and we are still in the business we are still trying to determine what the extent practicable and appropriate actually means to us. The legislation also authorized the Secretary to obtain copyright as I mentioned. The legislation also contained an authorization for an appropriation to be made to support the objectives of the program. Now, in the authorization provision, the Congress also inserted a provisionthat requires us to obtain additional authorization, new authorization, before additional appropriations could be made for the program.

Now, operationally what does this legislation mean to us? We believe that it means that we have greater flexibility in distributing the products of the system. It means that we are not restricted as we were originally to the more conventional methods of distribution of technical information through government sources. We plan to publish and distribute our printed products through the government printing office and some cases through the Clearing House for Federal Science and Technical Information and by working in cooperative arrangement with commercial publishers and other purveyors of information.

But printed information is not the only out-put of the program. We expect also that information will appear in any form in which it can be recorded. This would include microfiche, punch cards, tape, and any other thing that now exists or may come along in the future. An important aspect of these other forms of recorded information is that the government printing office does not handle or distribute these kinds of recorded information. We plan for handling these kinds of information again to work through the Clearing House and we do have tapes on sale right now at the Clearing House. We plan also to work with other services that are available and that shall become available. At present we see no advantage to establishing an elaborate in-house service within the NBS to provide computer searches or other sophisticated applications of the material that we are producing. We plan probably to lease tapes or other information to any computer service bureau that wants to use them to make the contents available to their own customers. We plan to have a flexible attitude toward all proposals that are made to us for the distribution of information. We don't believe that any one single method of distribution is going to be the ideal way of distributing the products of the future. A copyright provision that we have we hope will enable us to have more to say about the way information is handled in the future than would be the case if we did not have that control.

We have had preliminary meetings with representatives of publishers to discuss with them our arrangmenets for commercial publication of some of the products. In these arrangements for commercial publication of some of the products. In these arrangements the Secretary of Commerce would retain copyright but would assign it on an exclusive basis to the publishing house with which we would make an arrangement. Whether that exclusive arrangement would also include the right to disseminate the information in other forms such as computer services is an open question.

I began by saying that this was an experiment, that we still are experimenting in various forms of organization and in our distribution of products. We consider it necessary for us to be able to adapt to the changing situation both technologically and organizationally throughout the governmemt and in its relationships with private organizations. We are eager to meet the challenge of change and to be adaptable to it. We look forward to working with members of the Information Industry Association in achieving our specific goals of making this kind of scientific information that we are concerned with more accessible and more useful to the entire technical community of the United States. I welcome any comments and any questions both here and in the future from members of your group. Thank you.

COPYRIGHT REVISION - ISSUES AND INTERESTS

Bella Linden

Recently, our office has been receiving a very fine newsletter entitled "Knowledge Industry Report" which reports business activities in the field of information transfer with particular emphasis on innovative devices and systems based on computer technology as well as other sophisticated hardware and software. Preceding its notice of copyright, the newsletter defines its area of coverage as follows:

> "Knowledge Industry - a complex of organizations engaged in developing useful information for education, business and individual use and the technology involved in collecting,processing, storing, transmitting and retrieving it."

Curiously enough, this definition of the activities of the Knowledge Industry is fully applicable to the activities of prehsitoric man recording information on the walls of his cave.

Primitive man's first efforts at recording information by storing it on cave walls for subsequent retrieval for his own use and that of others was, after all, the first known technique for "collecting, processing, storing, transmitting and retrieving" information. However, the availability of the stored information was limited. Man had to go to the cave where this knowledge rested in fixed form. The information could not be transported to him. Availability and access to information having become man's concern, he invented clay tablets. This ingenious device made it possible for information to be stored for subsequent retrieval not only at a later time, but information because transferable from one geographic location to another. Thus, the creation, collection and processing of information for storage, transmittal and retrieval in a fixed form was a fait accompli long before the Christian era.

In the area of information transfer, the subsequent centuries were devoted to the development of more sophisticated and more expeditious devices, but, the concepts and goals of all of these devices - papyrus, the Guttenberg press, offset press, phonograph records, motion pictures, etc., all remained the same, the collection, processing and storing of information in fixed form for transmission and retrieval at a later time and in different georgraphic locations. The created information itself remained constant no matter how stored, no matter how readily available for retrieval, no matter how sophisticated the transmitting technology became. The contents of input equalled the contents of output.

From prehistoric times until the Twentieth Century, the amounts of knowledge in any given sphere of activity, or in any discipline, were susceptible of being utilized to society's reasonable satsifaction by inventions that stored increasingly larger volumes of data and made it available to the user by increasingly rpaid means and at greater distances.

The knowledge explosion to which the constituents of the Information Industry are responding presented a new challenge. The avalanche of new material not only is stored but may be sorted, selected, complied, condensed or reconstituted, as the case may be, by increasingly sophisticated devices and systems so that retrieval may be achieved of only those information bits required by the user. It is the attempt to resolve and include in an existing legal structure this revolutionary processing of information subsequent to its storage as well as its retrieval in non-traditional forms that is causing the greatest dilemma to all concerned with the proposed revision of the 1969 Copyright Act.

We are no longer limited to achieving in a more sophisticated manner and with modern versions of clay tablets, information transfer in its traditional meaning. The new processes of sorting, compiling, restructuring, selecting and manipulating information after it is stored allow the mechanized, rapid, and, eventually, inexpensive retrieval of entirely new communicative content and expression - something other than the creation of a "new version" - and there is little in the history, philosophy or structure of copyright law which contemplates this new technology or its end products. To be sure, we are still dealing with both information and its transfer, but one must not be led by this semantic coincidence to conclude that any copyright act can necessarily cope. As experts in what has become called "space law" are discovering, calling a space ship a "ship" does not make it an ocean-going liner and some legal system other than an expanded or "adapted" admiralty jurisprudence is required to govern space and space ships. So too, it is submitted, it may well be that Copyright Law simply does not "work" as a system for governing all aspects of this new technology of information transfer where the "transfer" encompasses the change, mutation or "homogenization" of items of stored information.

As was pointed out by an earlier speaker, historically and in its philosophical setting, copyright law evolved as a means of policing and protecting information stored in fixed form. The combination of the two generic words "copy" and "right", which describe and define the laws relating to the proprietary rights to information, clearly reflect the subject matter that society and the law intended to deal with.

Conceptually and pragmatically, copyright law was society's response to the needs of protecting both the integrity of the work created and the proprietor's rights to the fruits of his labor. The only significant departures from this concept of limiting a proprietor's rights to information embodied in fixed form are the common law right to a lecture and the performance rights recognized under the Copyright Statute. In the Twentieth Century the invention of electronic devices made it feasible to transmit information in ephemeral form such as television performances and telephone communications. However, one factor remains constant, the television viewer sees and hears that which the writer wrote as it is performed; the reader reads that which the author wrote and authorized to be published; the audience hears that which the composer set forth in musical notations --- throughout, the content of input equals the content of output.

With modern software and its transmitting devices, however, the content of output may no longer be recognizable, nor its ownership identifiable, nor its communicative nature similar to input. Yet, "copyright" deals with no more than what its name implies, i.e., the right to "copy", to transfer information, the communicative content of which remains constant.

Since the topic assigned to me is Copyright Revision - Issues and Interest, I have construed it as requiring that (a) attention be directed to those provisions of the proposed law which affect your operations as purveyors of sophisticated clay tablets as well as (b) to call attention to those areas where the utilization and exploitation of your products may fall dehors the scope of a copyright statute.

Accordingly, attention will be focused on the following: (1) the subject matter of copyright; (2) ownership of copyright; (3) the nature of the exclusive rights granted; (4) limitations on such rights; and (5) the National Commission Bill annexed to the Senate Bill to provide for the establishment of an investigative group to recommend to the legislature provisions for appropriate protection of copyrightable works in response to a computer technology of information transfer.*

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*My references will be to H.R. 2512 (90 Cong. 1st Sess.) as passed by the House on April 11, 1967 (referred to as the "Act"); unless otherwise noted, corresponding provisions will be found in S. 543 (91st Cong. 1st Sess.), the Senate version of the revision proposals, referred to as the "Bill".

The Constitution of the United States in its enabling legislation refers to the "writings" of an author as the subject of copyright. Article 1, Section 8, Clause 8 of the Constitution grants Congress the power to:

> "promote the Progress of Science and useful Arts, by securing for limited times to Authors ... the exclusive rights to their writings ...."

As was pointed out earlier in this session, the law, as a result of the ingenuity of legislators, lawyers and judges, has stretched the meaning of the word "writing" to include subject matter that was not envisioned by the draftsmen of our Constitution or by the draftsmen of any succeeding copyright law.

The various copyright acts, including the Act of 1909 which is still in effect (subject only to very limited modifications), described the "Bundle of Rights" comprising copyright as the rights to print, publish, copy, vend, make other versions, complete, execute, finish, perform and record, but the information storage and retrieval systems to which this language adverts is still limited by a view of information storage and retrieval predating the manipulative uses of information in the memory core of a computerized system.

Does the proposed Copyright Act cure these ommissions?

Any attempt to relate the provisions of the proposed Copyright Law to the interests of the constituents of the Information Industry Association requires readily available reference to the most pertinent provisions of the Act. Accordingly, they are set forth verbatim in their very technical and at times legalisic words of art or legal jargon not only as a frame of reference but as an attempt to provoke the Industry's evaluation and response in light of its own special knowledge and technical usage.

The definitions set forth in Section 101 of the Act point to the parameters not only of the subject matter of copyright but also of the directions and scope of the proposed protection. The most relevant definitions are as follows:

> "'Literary works' are works express in words, numbers, or other verbal or numerical symbols or indicia, regardless of the nature of the material objects, such as books, periodicals, manuscripts, phonorecords, or film, in which they are embodied.

> 'Motion pictures' are audiovisual works consisting of a series of related images which, when shown in succession, impart an impression of motion, together with accompanying sounds, if any."
>
> "'Audiovisual works' are works that consist of a series of related images which are intrinsically intended to be shown by the use of machines or devices such as projectors, viewers, or electronic equipment, together with accompanying sounds, if any, regardless of the nature of the material objects, such as films or tapes, in which the works are embodied."

The definitions also make it clear that a work is "created' when it is fixed in a copy or phonorecord for the first time." The concept of "fixation" which has traditionally been an integral part of copyright law, retains its status in the Act by definition:

> "A work is 'fixed' in a tangible medium of expression when its embodiment in a copy or phonorecord, by or under the authority of the author, is sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration. A work consisting of sounds, images, or both, that are being transmitted, is 'fixed' for purposes of this title if a fixation of the work is being made simultaneously with its transmission."

Two other definitions of which note should be taken are the following:

> "A 'derivative work' is a work based upon one or more pre-existing works, such as a translation, musical arrangement, dramatization, fictionalization, motion picture version, sound recording, art reproduction, abridgment, condensation, or any other form in which a work may be recast, transformed, or adapted. A work consisting of editorial revisions, annotations, elaborations, or other modifications which, as a whole, represent an original work of authorship, is a "derivative work'.

> "To 'display' a work means to show a copy of it, either directly or by means of a film, slide, television image, or any other device or process or, in the case of a motion picture or other audio-visual work, to show individual images nonsequentially."

Thus, the Act appears to have recognized computer related modes of expression in addition to more traditional works, and in some respects may have accorded them equality of treatment. Section 102 of the Act states:

> "Copyright protection subsists ... in original works of authorship fixed in any tangible medium of expression now known, or later developed from which they can be perceived, reproduced or otherwise communicated, either directly or with the aid of a machine or device."

The criteria of originality and authorship have purposely been left undefined, but are clearly intended to incorporate the standards adopted by the courts under the current law - i.e., independent creation of expression without regard to aesthetic appeal, literary, artistic or scientific merit, or the novelty of concept.

Consideration should be given to one commentator's suggestion that a recent decision under the current law holding a particular expression of a concept capable of only a limited number of possible means of expression ineligible for copyright protection on the grounds of public policy may be applied to deny copyrightability to certain computer-related expressions. It is argued that in "original" computer programs where the number of alternative sequential demands is limited and finite the granting of exclusive rights to one proprietor may be detrimental to the development of the art.*

As to the definition of "authorship," it has been questioned whether it should encompass a non-human agency as creator of original output which is merely a compilation of information bits selected from a large number of works stored in the memory core of a computer based system.

The Section of the Act setting forth the exclusive rights accorded a copyright proprietor, when taken together with the definitions mentioned earlier, reveals a sensitivity

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*See note, 67 Mich. L. Rev. 167 (1968) discussing *Morrissey v. Proctor & Gamble Co.*, 379 F. 2d 675 (1st Cir. 1967) and response to machine and electronic technology but only to the extent that the content of input equals the content of output. Thus, under the proposed Copyright Law, any work sustains its status as copyrightable and protectable at least as long as it is in fixed form and is not fragmented into minute particles, homogenized with particles of a myriad of other works.

Under Section 106 of the Act a copyright proprietor is granted the exclusive rights to do or authorize the doing of any of the following:

> (1) to reproduce the copyrighted work in copies or phonorecords;
>
> (2) to prepare derivative works based upon the copyrighted work;
>
> (3) To distribute copies or phonorecords of the copyrighted work to the public by sale or other transfer of ownership, or by rental, lease, or lending;
>
> (4) in the case of literary, musical, dramatic, and choreographic works, pantomimes, and motion pictures and other audiovisual works, to perform the copyrighted work publicly;
>
> (5) in the case of literary, musical, dramatic and choreorgraphic works, pantomimes, and pictorial, graphic, or sculptural works, to display the copyrighted work publicly.

However, in relating these exclusive rights to the technology of computerized storage and retrieval systems, the newly available techniques of input, manipulation and output result in speculation and some uncertainty as to the scope of protection.

Where input or output takes "hard copy" form (punch card, tape, microform, photoduplication) in some manner simulating material which is traditionally copyrightable the possible infringement of the right of reproduction of copies (or phonorecords) seems clear -- i.e., a reproduction of the material in fixed form from which it can be directly or indirectly communicated having occurred, the copyright owner may be protected.

Where the hard copy printout or the input itself may be considered an abridgment, condensation or other adaptation of copyrighted material, a violation of the right to prepare "derivative works", defined earlier, may be involved. If machine-accomodative coding is deemed a "translation", virtually every manner of unlicensed input or copyrighted materail would seem violative of this right. However, the preparation of derivative works (including translations into machine-readable form) may not encompass the protection of ephemeral scanning either as input or output.

Where output takes the form of images flashed on the screen (without simultaneous or adjunct fixation), neither the right of reproduction nor of distribution would appear to be involved as these rights refer to "copies" or "phonorecords" which in turn require "fixation" which itself is characterized by "embodiment ... sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration."

It would similarly appear that the right of public performance may also be inapplicable. To "perform" a work is defined in Section 101 as meaning "to recite, render, play, dance, or act it, either directly or by means of any device or process or, in the case of a motion picture or other _audiovisual work_, to show its images in sequence or to make the sounds accompanying it audible." At least where the transient image reflects textual matter "stored" in the computer, the "audiovisual work" provision would not seem relevant. Audiovisual works are defined in Section 101 as "works that consist of a series of related images which are intrinsically intended to be shown by the use of machines or devices such as projectors, viewers, or electronic equipment, together with accompanying sounds, _if any_, regardless of the nature of the material objects, such as film or tapes, in which the works are embodied." Although this definition suggests that an audio element is not a necessary component of an "audiovisual work", the phrase "intrinsically intended" would probably be construed to refer to the basic work as originally composed and not to the process by which it may subsequently be utilized in a device -- i.e., the text of a book stored in a computer would not become an "audiovisual work" merely because that particular device is constructed to retrieve it by throwing an image on a screen or rendering and "oral" retrieval.

Perhaps the word "render/ed/" in the definition of "perform" will be utilized in dealing with ephemeral output particularly since the _Fortnightly_ case* will have preceded any enactment of the new copyright law.

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*_Fortnightly Corporation_ v. _United Artists Television, Inc._, 392 U.S. 390 (1968).

There are indications that the right of public display was designed to encompass the situation under discussion (see H.R. Rep. No. 83 (90 Cong. 1st Sess. p. 26)) but it should be noted that, under the definition of "display" in Section 101, "to display a work means to show a copy of it either directly or by means of an image..." Certainly, this definition does not contemplate the image being the "copy" but it does appear to require that the image depict or reflect a pre-existing copy; thus, query, does the concept of fixation inherent in the definition of "copy" render this right also inapplicable?

Section 105 of the Act deals with United States Government works and flatly states that no copyright protection is available for such works. The provision states:

> Section 105. Subject matter of copyright:
> United States Government works
>
> (a) Copyright protection under this title is not available for any work of the United States Government, but the United States Government is not precluded from receiving and holding copyrights transferred to it by assignment, bequest, or otherwise.
>
> (b) A 'work of the United States Government' is a work prepared by an officer or employee of the United States Government as part of his official duties.

It would seem that the interests of this group would require a careful examination of this Section in light of its frequent roles both as Government contractors and as users of works created as a result of Government funded research. I recently noted with interest a report which describes two publishers as enjoying the benefits of an arrangement "for acquiring reports from expensively financed Government studies well ahead of all other commercial publications" and printing these reports under an alleged copyright before they had been seen by competitors.*

One can only speculate as to the possible effects of logical extensions of a recent decision that held that the prohibition against copyright in any publication of the United States Government in the current Copyright Act would not preclude a claim to copyright by the Government in a statue since the prohibition against Government copyright was intended to be limited to "printed publications."* The change in wording from Government "publications" to Government "works" proposed by the Revision program may cure any extensions of that court's conclusion.

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*Magazine Industry Newsletter, May 19, 1969 at pp. 1-2; the views of the Comptroller's Office of the United States on such tactics are given in Opinion of the Comptroller General, 158 USPQ, 173 (1968).

With respect to ownership of copyright, the question has been raised as to who is the copyright owner of works created for computer storage or instruction and works developed ab initio after storage.

Section 201(a) provides that such rights vest initially in the "author" of the work and, under Section 201(b) "in the case of a work made for hire, the employer or other person for whom the work was prepared is considered the author ... and, unless the parties have expressly agreed otherwise in a written instrument signed by them, owns all of the rights ..." Section 101, in defining "works made for hire," distinguishes between two categories of such works. The first is that of "a work prepared by an employee within the scope of his employment." We can expect that traditional criteria of the employment relation, used under present copyright law and in other areas (e.g., vicarious liability of employers for torts of their employees) will be applied although it may pose some particular problems in the computer area. For example, the classic determinant of the employer-employee relation is the degree of supervision and control exercised by the former over the latter's performance. Yet, in the case of a highly skilled computer programmer using pretty much his own initiative in solving specified problems, "supervision and control" may be an inaccurate or inappropriate indicia of employment. An industry-pervasive absence of closely exercised supervision and control may entirely blur the dividing line between employee and independent contractor.

Another problem in this category may result from the fact that computer programs may be the subject of patent protection. Patent law has evolved the concept of a "shop right" to deal with inventions made by employees under which patent rights in an invention made by an employee in the course of general employment remain with the employee but the employer gains a "shop right" to use same whereas patent rights in an invention made in course of specific employment or assignment enure to the employer. Though rights granted under Patent and Copyright Acts differ in fundamental nature, specific conflicts may arise where, for example, the employee-programmer secures the right to practice the invention expressed in the program and excludes third parties from using it, but the employer retains exclusive rights to reproduce, distribute, perform or display the expression itself or to authorize others to do so.

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*Scherr v. Universal Match Corporation, 160 USPQ 216 (S.D.N.Y. 1967)

The second category of "works made for hire" consists of "a work specially ordered or commissioned for use" for certain statutory purposes if "the parties expressly agree in a written instrument signed by them that the work shall be considered a work made for hire."

In order to be capable of being consensually transformed into a "work made for hire" under this provision, the work must be ordered or commissioned for use as one of the following:

(a) a "contribution to a collective work" -- the requirement in Section 101 that such contributions constitute "separate and independent works in themselves" renders it inappropriate to most compositions of data for input;

(b) a "compilation" -- although defined in Section 101 as a "work formed by the collection and assembling of pre-existing materials or of data that are selected, coordinated, or arranged" in an original manner, the fact that the commissioned work must be for use "as a", rather than "in a" compilation may render this classification relevantly insignificant for all but relatively broad-based informational input;

(c) as part of a motion picture;

(d) an atlas;

(e) a translation -- if the notion that coding for machine use comprises a "translation" is accepted under the act, this may come to be the most significant use specified in this provision;

(f) a test -- in the area of computer-assisted education, the inclusion of this purpose may assume significance;

(g) a supplementary work -- defined as a work "prepared for publication as a secondary adjunct to a work by another author for the purpose of introducing, concluding, illustrating, explaining, revising, commenting upon or assisting in the use of other words ..." Although a broad definition of the term "assisting" in the definition of "supplemental works" may render it appropriate to compute programs which have been "specially ordered or commissioned", the relevance of this provision to even such programs and to general computer usage may be limited by the definition of "publication" as the distribution of "copies" - i.e., fixed works.

(h) an instructional text, defined as a work "prepared for publication with the purpose of use in systematic instructional activities" --- in light of the developments in computer-assisted education and the proliferation of "non-book" matter, the following observations of the House Committee responsible for this provision are of interest:

> The concept is intended to include what might loosely be called 'testbook material', whether or not prepared in book form or in the form of text matter. The basic characteristic of 'instructional texts' is the purpose of their preparation for use in 'systematic instructional activities', and they are to be distinguished from works prepared for use by a general readership. /H. R. Rep. No. 83 at p. 87 (90 Cong., 1st Sess.)/

However, the requirement that an instructional text also be "prepared for publication" would appear to limit its relevance with regard to input which is retrieved for instruction purposes solely by "performance", "display", or, if not included within those terms, image projection rather than through the medium of hard copy print-out for distribtuion.*

It thus may be that, absent a broad definition of "translation", the category of works capable of consenual transformation into "works made for hire" may be significantly limited. Rights in works which are specially ordered or commissioned but outside the scope of the purposes enumerated in Section 101 may, of course, be acquired by assignment. However, the difference between copyright ownership qua "authorship" (as an employer-for-hire) and proprietorship acquired by assignment may result in a shorter duration of copyright in the latter case under Section 302.

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*While there might appear to be a contradiction between the requirement that an "instructional text" be prepared for distribution to the public (i.e., "for publication") and that it be foreclosed from access by a "general readership," this would appear to be resolved by the absence of any requirement that the "public" be of a general nature; presumably, there may exist a "limited" public comprised of students.

Also, although the term of copyright in the Act does not establish the two separate 28 year terms of the present law, still there are reversionary rights afforded to the original author* which can cause havoc to the kinds of interrelated and team created works which developed in the software field.

The Fair Use provision which until this Act has been a common law concept is, theoretically at least, susceptible of protecting software from unauthorized piece meal uses. In determining whether such as privileged fair use of copyrighted material has occurred, Section 107 provides that among the factors to be considered are the following:

(1) the purpose and character of the use;
(2) the nature of the copyrighted work;
(3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
(4) the effect of the use upon the potential market for or value of the copyrighted work.

As a legislative recognition of a doctrine developed by the courts under the present law, the last-mentioned standard of competitive effect can be expected to retain the same preeminence it has been accorded prior to revision, but it is questionable whether this factor, or indeed the entire concept of fair use -- developed essentially as a shield for criticism, review and like uses of relatively insubstantial portions of copyrighted material -- is really appropriate to the present and future status of information technology. These rather traditional criteria of fair use may ultimately prove as difficult to apply to computerized information storage and retrieval as is the 1909 Copyright Act itself.

If hard copy printout is intended to be limited by the programmer to short selections only of any work or works contained in the memory core of the computer, the application of the Fair Use provision would result in virtually all uses being fair and privileged. Similarly, the ephemeral flashing on the screen (assuming, for the moment that such might infringe one of the enumerated rights) of a paragraph of a copyrighted work or several paragraphs from several copyrighted works would again result in the protective mantle of fair use relieving users from any obligations whatsoever to the copyright proprietors. Certainly, when we advert to the manipulation, sorting and selection of copyrighted works in the memory core of a computer where the output occurs after internal scanning and rejection of most of the contents and the homogenization of the minor portions selected to form a newly expressed idea, chart or other species of information, any traditional concept of fair use is again equated with free use.

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*Under Section 203, in the case of any work other than a work made for hire, the assignment or license of a copyright is subject to specified rights of "termination" by the author(s) or his statutory successors in interest.

Even if copyright law can be so stretched and distended as to include the newly evolving technology of information transfer, the application of a traditional fair use concept would cause copyright protection to be little more than theoretical as to the ephemeral uses which are achieving increasing value and significance in the new technologies.

Under Section 110 the Act that giveth becomes the Act that taketh away. For the first time in our copyright law, there is a section clearly entitled "Limitations on the Exclusive Rights of the Copyright Owners." The basic rationale seems to be as follows:

> Yes, we are a private enterprise or economy. We recognize private incentive in the very enabling legislation for copyright protection set forth in our Constitution. However, since knowledge and information is of paramount importance in our society and in our struggle to maintain international preeminence, it is necessary to permanently preempt some of the rights of a small creative segment of our society for the good of all.

Some who are financially rewarded from the creation and development of transmittal devices and others whose economic livelihood depends on the utilization of the information transmitted via these new technological systems consider that their societical roles require immediate untrammeled access to all knowledge without financial reward or incentive to authors whose creations are the essence of their activities.

A battered and mutilated Section 110 entitled, "Limitations or Exclusive Rights: Exemption of Certain Performances and Displays" was enacted by the House of Representatices. A somewhat more modest Section 110 is set forth in the Bill presently before the Senate. However, the battering rams are in full operation. There is every indication that the Senate will modify this section further and perhaps even eliminate Section 110(a)(D) of its Bill* (the only articulated acknowledgment afforded to computer technology.)

Section 110(1) of the Act exempts the following activity from what would otherwise constitute infringement of copyright:

> /The/ performance or display of a work by instructors or pupils in the course of face-to-face teaching activities of a nonprofit educational institution, in a classroom or similar place devoted to instruction...

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*Section 110 (2) (c) in the House Act.

This provision deals only with "performances" and "displays"; the reproduction or transmittal of "copies" is not affected. Thus, the making of an unauthorized photoduplication by an instructor will not be relieved from liability by this section even if the reproduction was for purposes of "display".

The exempt performance or display must be "by" an instructor or pupil. One may ask whether this requires a purely personal activity, or whether pupil initiation of a performance or display actually accomplished by a classroom viewing screen or desk top console is also within the scope of the provision. Since the Report of the House Committee clearly contemplates display by motion picture or slide projector (see H.R. Rep. No. 83 at pp. 41-42), it may be that initiation of mechanical activity remains within the intent of the word "by". The performance or display must also be "in the course of face-to-face teaching activities". According to the House Committee, this undefined criterion is intended to exclude transmissions into a classroom, but to to include the use of projection or sound amplification equipment within the classroom (H.R. Rep. No. 83 at p. 41). Since the Act's definition of "transmit" --- and it may be assumed that the Committee Report used the term in a similar sense --- refers to the communication of a performance or display by which "images or sounds are received beyond the place from which they are sent", information being retrieved from a remote storage unit in the form of a "performance or display" on a classroon viewing screen, desk top console, or the like, would not appear to be within the exemption of subsection (1) of Section 110.

However, subsection (2) does provide an exemption from liability for certain performances and displays occuring after a process of transmission from a remote source in connection with instructional activities. But part (C) of this provision (part (d) in the Senate Bill) requires that "the time and content of the transmission /must be/ controlled by the transmitting organization and /must not/ depend on a choice by individual recipients in activtivating transmission from an information storage and retrieval system or any similar device, machine or process" in order to qualify for the exemption. In this area, the House Committee accepted as fully justified the fears of authors and book publishers that visual retrieval by remote users of stored input could seriously prejudice their markets and restricted the exemption to a more traditional form of educational broadcasting. Yet, as noted earlier, where the visual image retrieved is evanescent and unaccompanied by an adjunct fixation, there would appear to be serious doubt as to whether any exclusive right has been infringed, thus rendering reliance on an exemption to justify infringement by computer transmission unnecessary and leaving the acknowledged danger without remedy.

As stated earlier, whatever comfort may be gleaned from subsection (C) is likely to disappear since the Senate Subcommittee is likely to eliminate this provision before reporting the Bill out to Judiciary Committee as a whole. We then would be confronted with the effects of the Fortnightly decision (the majority view has already been cited by some as relevant to computer software). Would computer assisted instructional material then have any copyright protection? Does Justice Black's partial dissent in the recent Lear case* raise doubts as to the availability of the doctrine of trade secrets where copyright protection has failed?

Section 111 of the Senate Bill, completely eliminated from the House Act by floor amendments, embodies the so-called "CATV exemption" as well as exemptions for certain other secondary transmissions. This is a very complicated section which encompasses a graded scheme of liability and exemption depending upon a variety of factual contexts. What should be pointed out, however, is that there is nothing in this section which limits its applicability to "antennas" or "television". It is a section dealing with secondary transmissions with little, if any, significance attaching to the physical manner in which they are achieved. "Secondary transmissions" are defined essentially as adjunct communications made simultaneous with another transmission to the public, without reference to the subject matter of the transmission.

If a microwave network can prove as commercially viable for computerized information transmittal as telephone lines, the "CATV exemptions" must be scrutenized with a good deal of caution and care. In fact, control over devices to permit the conversion of the telephone system, essentially an analogue system, to a digital system is already the subject of F.T.C. interest and diputatious concern. The pressure for exemptions and special privileges for CATV systems may result not only in permitting free re-transmission of the Jackie Gleason shows (however horrendous that possibility), but also in totally unintended exemptions for all varieties of information transmittal accomplished via cable networks.

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*Lear, Inc. v. Adkins, 162 USPQ 1 (U.S. Sup. Ct. 1969). In this decision the Supreme Court held that a patent licensee sued for royalties is not estopped to assert the invalidity of a licensed patent, thus overruling its decision in Automatic Radio Manufacturing Co. v. Hazeltine Research Inc., 339 U.S. 827 (1950). Justic Black, joined by the Chief Justice and Justice Douglas, entered a concurring opinion dissenting from that part of the majority's opinion which, in the dissenters' view "reserved for future decision the question whether the States have power to enforce contracts under which someone claiming to have a new discovery can obtain payment for disclosing it while his patent application is pending, even though the discovery is later held to be unpatentable". Justic Black expressed his belief that "no State has a right to authorize any kind of monopoly on what is claimed to be a new invention, except when a patent has been obtained from the Patent Office .... one who makes a discovery may, of course, keep it secret if he wishes, but

(footnote continued)

It therefor seems obvious that the Information Industry Association and its membership must actively participate in the CATV dialogue and any proposed statutory solutions.

Although the Act provides some limitation on the reproduction right in Section 108 ("Reproductions of Works in Archival Collections"), librarians and representatives of educational organizations have urged the extension of reproduction exemptions. The librarians seek the privilege of making copies of works for archival purposes and for replacement of deteriorating copies as well as copies of works not readily available for purchase at a reasonable price. Additionally, they seek exemption from liability (a) if a library employee makes a photocopy of a work at the request of an individual for his personal use; (b) where a copy is made for inter-library lending; and (c) where a user makes his own copy of a coin-operated photoduplication machine located in the library.

Modern technology increasingly makes photocopying a practical and commercially feasible alternative to the purchase of a copyrighted work. What is being sought may, as a practical matter, be something which all responsible librarians and educators truly do not intend --- an exemption for single copy on demand reprinting. This issue is currently under debate and the subject of negotiation between the interested parties.

(Footnote continued from preceding page)
private arrangements under which self-styled 'inventors' do not keep their discoveries secret, but rather disclose them, in return for contractual payments, run counter to the plan of our patent laws [which plan] cannot be frustrated by private agreements among individuals, with or without the approval of the State." Justice Black deemed this view to be fully in accord with (1964), and *Compco Corp.* v. *Day-Brite Lighting*, 376 U.S. 234 (1964). *This may be the vanguard of an attack on trade secrets as a protective device for computer programs*.

Title II of the Senate Revision Bill proposes the establishment of a "Commission on New Technological Uses of Copyrighted Works"; Section 201 of this Title provides that:

> "The purpose of the Commission is to study and compile data on the reproduction and use of copyrighted works of authorship (1) in automatic systems capable of storing, processing, retrieving, and transferring information, and (2) by various forms of machine reproduction. The Commission shall make recommendations as to such changes in copyright law or procedures that may be necessary to assure for such purposes access to copyrighted works, and to provide recognition of the rights of copyright owners."

Title II is thus a recognition that there has not yet been sufficient experience with the utilization of material from or by the computer based technology to permit fair and effective copyright legislation.

It should be noted that the National Commission's mandate appears to be limited to recommednations for accommodating copyright law to the new technology. If the Commission's investigations result in some measure in isolating important and valuable rights in software that cannot be deemed appropriate for treatment in a copyright law then the issue of how to deal with these rights may be as unresolved years hence as it is today. It may be that what is needed is new statutory recognition of a new bundle of rights that fall neither under the aegis of copyright nor patent. It may be that a new administrative agency will be required. It may be that such legislation or regulation would have to deal with the right of privacy, the distortion of views of the author on computer output (if less than his entire work is part of the output) -- in short, "moral rights" of an author in a computerized society. It may even be that censorship by those who control the computerized network (by eliminating from its programmed instructions any reference to certain works within a given discipline) may result in censorship more threatening to freedom of expression than has hitherto been possible.

Should there be a second National Commission to deal with non-copyright issues or is it advisable to seek to have the scope of the mandate of the National Commission sufficiently broadened?

Although the foregoing analysis is in large measure an attempt at presenting those sections of the proposed Copyright Law most relevant to the activities of the Information Industry and the anti-protectionish construction of these provisions expressed by some, the result may be a modestly successful effort by the confused increasing the confusion among the less confused. However, a message is intended:

I. The Information Industry should undertake a program of education and information transfer to the legislators, to the Copyright Office and to the users of its systems and its products so that the copyright legislation can effectively deal with the technology of the Twentieth Century.

II. As specialists, and not as special interest lobbyists, the constituents of this Association should undertake the accumulation and transmission of sufficient data defining and describing its activities and its problems to any National Commission.

III. The Information Industry should evaluate the non-copyright issues that may materially affect its functions and articulate its views and recommendations for appropriate legislation.

COURT OF CLAIMS AND COPYRIGHT INFRINGEMENT REMEDIES

Alan Latman

Mr. Latman - Has there been much talk this morning about the American Revolution? That other revolution? Barbara, Mr. Brady, and Bella touched on that only lightly? Well, incidentally I've now asked a couple of questions and I want to say right at the outset that you should feel free to break in at any point with some questions.

The reason I bring up the revolution is that my subject today is really copyright infringement remedies with respect to the government. As we are reminded that we are a revolutionary people we could assume that one of the bases of the American revolution was to prove that the proposition that the King can do no wrong is wrong. But actually that concept did creep into our jurisprudence at least to the extent that the King (which was of course then the sovereign of the U.S.) could do no wrong or, in a better sense, the wrong that the sovereign could do couldn't be righted, couldn't be remedied.

This seems a rather harsh thing and as the Constitution was written with some very important rights in individuals, a concept arose pretty quickly that if those constitutional rights were infringed by the government, that of course individuals should have a right to sue the government. That was recognized quite early. It took very little effort to extend this to a statute of the U.S. government which gave somebody a right. If that statutory right were violated that individual could sue. And it was a short jump from there, to the point where the government, acting like a private party, enters into a contract with somebody. Certainly the government should be able to be sued for breach of that contract. As many of you know, lawyers immediately construct the concept that a contract can be either expressed or implied. So it took very little further time for the government to be liable for an implied contract. So a jurisdication was in time established in the U.S. Court of Claims in Washington for suits against the government founded on a right under the constitution, under a statue, treaty, or under a contract, expressed or implied.

Well, the question then arose as to whether copyright infringement might not be some kind of implied contractual violation. There crept into the remedial stature, however, a little phrase that should have given a warning. It said that the liability would extend in cases "not sounding in tort." For non-lawyers you should know that cases not only are lirigated, but they also "sound." And cases not "sounding in tort" were within the jurisdiction of the Court of Claims and, in time, the District Court.

A few people sued the government for copyright infringement and one sued in the Court of Claims and it was held, as most people would have predicted, that copyright infringement is a tort. A tort as you may well know, is a civil, as opposed to criminal, wrong not "sounding" in contract! It looked as though torts included copyright infringement and indeed that was the holding of the court. So there was no remedy under this traditional, so called Tucker Act, for infringement of copyright.

What about other torts? Up until 1946 you had no remedy for any torts, not just copyright infringement. Of course one of the most familiar torts is the unintentional tort of negligence. And indeed if a post-office truck ran into your stationwagon in 1943 you had no remedy against the government. Now this is a very important concept because we tend to think of copyright as a unique area and indeed it is unique in a number of respects. But in the area we are talking about now, which is liability of the government or remedies against the government, until 1946, there was no remedy against the government for any tort. The only route taken by people was to get their Congressman or Senator to introduce a private bill which would either make an award or in cases would specifically give jurisidction to the Court of Claims. For example, to hear the case of such and such collision. That actually is how it worked until 1946.

In '46 Congress enacted the Federal Tort Claims Act which generally provided that the government was liable for a wrongful or negligent act or omission by one of its employees acting within the scope of his employment under circumstances in which a private individual would also be liable. Let's follow through and think for a moment whether copyright infringement now might not come into the door. I think the answer has generally been assumed to be no. I know of no actually cases under the Federal Tort Claims Act, do you, Barbara? I don't think anyone ever tried it and probably the reason they didn't is the legislative history this requires us to splite torts into even further categories. The Act was actually designed to cover the post-office truck hitting somebody, the common law garden variety torts, not fancy statutory ones like copyright infringement. So there have been no cases since '46 that test whether you could sue the government under the Tort Claims Act. Now one reason for that is that in 1960, as late a data as that, a statute was passed which expressly made the government liable for copyright infringement. There had been for some time a specific provision for government liability for patent infringement and this was a companion provi sion in the same section, a different subsection. This was I recall, one of the last accomplishments that Arthur Fisher was able to see in his life time. I remember, I think, the last public appearance he made was to announce progress of that bill in 1960. And what that bill did, what that law does, is to give the U.S. Court of Claims in Washington exclusive jurisdiction over copyright infringement.

Now there was two somewhat distinct considerations that gave rise to this statue and this is very important for those of you who contact with the government in the information area. One, as this little history showed, was to grant relief, more or less as justic would seem to call for, and to unclog Congress with the private bills with their unseemly and time consuming procedures. But there was quite a distinct consideration: There were a few suits against individuals employees of the government for copyright infringement. People were getting a little desperate with all these doors being closed to them so they sued individuals and individuals, indeed, were held liable.

Government employees doing nothing more than, for example, reproducing a map or something else on his job was considered to be liable if indeed copyright infringement was spelled out by the proprietor. Now one of the specific provisions in the 1960 statute covers that and says that the exclusive remedy for copyright infringement in this area will be by a suit against the government in the U.S. Court of Claims. In other words, there can be no action against the individual. There can be no action against the government contractor. But the statute is quite clear that if a government contractor infringes a copyright the government will be liable, not the contractor, not the employee. It is a rather tricky section and for the lawyers here it's 28 USC 1498(b).

The section incorporates a couple of more limitations on suits against the government which are not applicable to suits in copyright in general. There are certain situations, as I read the statute, where the connection between the creation of the work and the government might fall far short of being "government publication" and therefore, not within the scope of the section of the copyright statute that says government publications are in the public domain. And yet the proprietor of such a work would be precluded from suing the government. So the government has carved out a rather very specific area of liability. The sovereign has consented to be sued, but only on its terms.

Another interesting and crucial point to this suit against the government for copyright infringement is the fact that you cannot get an injunction. One of the traditional remedies of a copyright proprietor is to stop the thing from happening. But what you can recover are your damages and the language of that statute is similar to the patent language and both I think harken back to the constitutional provision of eminent domain. In other words, it is practically a situation where the government, well it is a situation, where the government just as they can condemn or appropriate your land can appropriate copyrighted property and their liability will be only for damages. Now it is true, unlike the general eminent domain provision where experts get into court and argue with each other about value, that you do have the benefit of the so-called "statutory damage" provision of the copyright law. This, as many of you know, is a provision permitting the court to award certain fixed sums or sums within fixed limits even in the absence of specific proof of dollar amount. That's a helpful thing.

Mr. Knox - That's something like $250.

Mr. Latman - The range will be between $250 and $5000 for each infringement. There is a provision for even the raising of the $5000 ceiling and I suppose there's no specific provision in 28 USC 1498 (b) dealing with that ceiling so that it presumably the lifting of the ceiling might even apply to the government. Now as Paul Zurkowski mentioned to me in the chat we had about this subject, maybe in a sense you really have got a compulsory license here with the government. That's really exactly what you have, with the rate being fixed in each specific law suit by the Court of Claims. It's interesting to note, I guess, that with all the clamor and all the effort going into the statute that there have been no reported decisions; there have been no final adjudication under this statute in the 9 years since its enactment. There have been two cases to my knowledge commenced and both are still pending, in the Court of Claims. One is for the copying by the Department of Agriculture of certain market quotations in the field of eggs and dairy products and the other is for photocopying by the Department of Health, Education and Welfare of scientific journals. Both of these cases are presently pending in the court.

I may add or you may ask what you do about an injunction. Are you completely powerless? In the agriculture case, there is a companion action pending in the United States District Court for the Southern District of New York which does seek an injunction against the Secretary of Agriculture and his subordinates, not on a copyright theory (because as you recall the copyright infringement provisions says that the exclusive remedy shall be in the Court of Claims against the government but based on a misappropriation theory under the old Associated Press doctrine. That case is also presently pending.

CATV, INFORMATION and COMMUNICATIONS POLICY

Hubert J. Schlafly

We are living in a time that invites prophecy and yet requires a certain wariness on the part of the prognosticator. As a boating enthusiast, I might offer the analogy of sailing across a body of water. If we do not make allowance for the currents, we may wind up a long way downstream from our objective. In your industry and mine, the currents of change are running so swiftly that it will take all our navigational skills to keep from being swept off course.

I recall a statement by Dr. John R. Pierce of Bell Laboratories, an imaginative and innovative scientist, even if he does work for the telephone company. At a symposium a couple of years ago on the communications explosion, Dr. Pierce commented:

"It is sometimes easier to see where we will get in the long run than it is to know just when we will get there."

Now, Dr. Pierce is a science fiction writer of note, and if he doesn't know, what chance have the rest of us? But each of us has his own schtick -- or I guess the word nowadays is "bag" -- and mine happens to be the CATV industry and where it is...or might...or ought to be heading.

In recent months I have talked about cable television with extremely conglomerate audiences. There have been show business types, broadcasters, publishers, educators, advertising agency executives, financial analysts, bankers (let's not forget the bankers), local, state and national government officials (let's certainly not forget them) and one of the toughest assemblages of all, our company's shareholders.

All of them have sensed a special relationship of CATV to their particular fields of interest, and it has been stimulating to explore the implications and ramifications. Today, it is a pleasure to be with yet another group -- representatives of the information industry. I am grateful for the opportunity to be with you -- to tell you about CATV but, more importantly, to listen and learn from you.

I was particularly impressed by the insights expressed this morning by Mrs. Bella Linden. As she indicated, your industry and mine do, indeed, have a very large area of common interest. I believe an affinity is implicit in the fact that both our industries are young -- yours the product of the information explosion, mine a manifestation of an equally significant explosion in communications. Like the CATV industry, yours is a boat-rocker, a disturber of the status quo. We have mutual concerns in the areas of copyright, the proprieties of government intervention and the immense social impact that we foresee for our respective disciplines.

You are piling up information at a dizzying rate -- and with it problems. I am reminded of a cartoon that accompanied a Business Week article on electronic banking. The drawing showed an old-fashioned looking bank president, engulfed up to his shoulders in mounds of papers and dictating to his prim, also old-fashioned looking secretary. The caption read:

"Take a letter, to that computer salesman: 'Dear Sir, we have reconsidered our decision...'"

For all of the information your industry can generate is worth very little unless it can be not only stored and retrieved but also communicated to its prospective users. That, of course, is why I'm here today. Because we expect to help you make sure that those users do not remain merely prospective users.

I am not going to attempt to talk to you about your business. You know much more about that than I do. But I do want to talk to you about CATV and the communications explosion, and to suggest to you some of the ways in which our two industries will interact in the future.

First, let me make what seems to be a contradictory statement. When I speak to you about cable TV, I don't really mean cable TV. That is to say, I am using this term for want of a better way of referring to the endless list of ways for the transmission of information over a controlled pathway -- as opposed to broadcasting it through the air. I believe that my industry's future depends upon flexibility. I conceive of the CATV system of the future using a combination of cable and other devices, or even, perhaps, not any cable at all.

Our present coaxial cable is an improvement -- a vast improvement -- over either the scatter-shot, specturm-wasting technology of radio and television broadcasting or the phone companies' wired system. Similarly, remarkable improvement has been made in the cable technology employed today in comparison with the state of the art when CATV began, and this is a technology that continues to change and improve all of the time.

My company and Hughes Aircraft Company already are experimenting, with the blessing of the Federal Communications Commission, with a system of multiple-channel microwave distribution -- a form of "cableless cable", if you will, that already is helping us provide CATV service in Upper Manhattan.

Down the road a very short peice are a whole avalanche of other similar developments, many of which you know about. I have brought with me some reprints of a Television Magazine panel discussion in which the participants were the President's telecommunications advisor, James O'Connell, and Dr. Allen Puckett, executive vice president of Hughes Aircraft Company, in addition to Dr. Pierce of Bell Labs and me. This discussion, I believe, pinpoints some of the developments we we are talking about, and some of the controversies that surround them.

The Television Magazine editor who moderated this discussion summed the whole thing up rather succinctly in a covering article he wrote.

"Anybody who courts in communications these days," he observed wryle, "carries around his prophecy kit. It's full of futuristic terms, all useful because they can be plugged into a luncheon speech in almost any order. The standard pieces in the vocabulary include satellite-to-home TV, information-response circuit, home communications center, video cartridge, home facsimile-newspaper delivery, home computer access, wall-screen TV, electronic shopping, laser pipe, wave guide, holographic 3D -- the list aggravates with its familiar unfamiliarity.

"It's all so easy. The technology is all here, or clearly on its way, and the application is all there -- in a wantonly communicating future where every eye and ear in the world will be instantly coupled with any piece of visual or aural information it may fancy. Expeditions of the imagination into this super-plugged-in future, trip lightly over 'when' and generally come to rest on 'some time'."

Like yourselves, the CATV industry is bent upon making these oft-discussed marvels come to pass -- not "some time" but NOW -- or at the very least tomorrow, not the day after. To you, all of these things mean an almost infinite increase in your capacity to transfer much more information much more effectively...as you urgently need to do -- and cannot do by any present method.

To us, this same grab bag of technological wonders means an opportunity to navigate the mainstream of communications progress...to continue and to enlarge our role as a unique medium that has created earthquake -- if that's not too great a contradiction of terms -- in the way that several million Americans already receive their television pictures.

Why us, you may ask, and it is a fair question. My answer is that we are stubborn, cantankerous and, as Mrs. Linden suggested this morning, simply don't believe in the predestination of the telephone companies to monopolize the job of information transmission. We feel that we belong just as logically in this area as in television -- where we have established for ourselves despite the opposition of most of the deeply entrenched broadcasting industry.

By now, most of you may be familiar with the humble, rather casual and certainly unpremeditated origins of CATV as a TV reception service. What is most interesting and unusual about this story is that it reverses the usual pattern. Most innovations, most improvements in our standard of living or the way we are entertained or communicate originate in the populous areas and gradually spread to the rural outback. This has been true, almost without exception, of everything we hold dear from indoor plumbing to television itself. It also was the way, incidentally, that the telephone company monopoly grew. It took a long, long time and eventually federal subsidies for phone service as well as electricity to become available to the isolated farm home -- a precedent that may someday apply to the attainment of a totally-wired system for TV and information transmission.

CATV did not follow this pattern. It began in small towns -- places like Lansford, Pennsylvania, and Astoria, Oregon -- where merchants and appliance dealers erected crude master antenna systems to encourage TV set sales. Then it grew and grew, nurtured by public acceptance and improving technology, until it has achieved an almost total transformation in purpose, scope and expectation. CATV is two decades old in its original "community antenna" concept, and yet it basically is a new industry because it is only within the past few years that our real opportunity as a multi-channel conveyor of a great many types of services has come clearly into focus.

It is, in short, a long way indeed -- not as the crow flies, but conceptually -- from the Panther Valley in Pennsylvania to the canyons of New York City. Some time ago, I made the statement that CATV was at present a country road but that one day soon we would pave it and turn it into a super highway. Or, in another frame of reference, Nicholas Johnson of the Federal Communications Commission has said that comparing the capacity of coaxial cable to that of the present telephone system was like "comparing a river to a garden hose."

If this is true with present cable technology, think what implications lie behind such developments as short-haul microwave, satellite-and-cable combinations, laser beams, wave guides and so forth!

Now manifestly, we -- the CATV industry -- have no corner on these technological developments, no claim to research programs or laboratory facilities or scientific manpower that even begin to approach those of either the telephone companies or dozens of others in the communications, electronics and aerospace industries. To put it bluntly, we lag in research and development, in technical programs, in new product management. But we are beginning to catch up, and we are getting an assist from organizations with vast technological and scientific resources that see in CATV the super highway or the broad river of communications services that I have mentioned.

So I really am not speaking here about the jerry-rigged community antenna systems of the early CATV pioneers, although that provided a foundation for our industry. Nor am I speaking even about today's more sophisticated but still limited systems. For the cable or cable-combination systems that serve your purposes tomorrow will bear as little resemblance to those of the past and present as does today's Mustang to Henry Ford's first tin lizzie.

What our industry does have going for it, I think, is a flexibility, an adaptability to change that the ponderous telephone company machinery and mentality cannot match. That, and a rising tide of opinion on all sides that too much monopoly is as dangerous and debilitating in communications as anywhere else, and that an alternative system or systems must be developed to cope with the new era that already is upon us in both communications and information.

At the recent annual convention of the National Cable Television Association in San Francisco, a speaker was Dr. Edward Greenberg, associate professor of economics at Washington University, St. Louis. Dr. Greenberg was co-author of a paper, "A Proposal for Wired City Television," that really shook up the TV industry when it was delivered here at Airlie House at a high-level 1967 conference on spectrum management.

Dr. Greenberg told the NCTA convention:

"In my classes, I have been fond of using CATV systems as an example of the free enterprise system working effectively. It is a perfect example of a new industry appearing to fill a gap in existing services. Two features make the industry's development and growth particularly interesting to an economist:

"1. CATV systems used existing technology in an ingenious fashion to supply those services. The systems were not the product of a large-scale reseach organization, but were developed by local businessmen, applying and improving well-known technology.

"2. The industry's relation to the FCC is interesting: its original development occurred with little or no recognition by the Commission; subsequently there occurred a period of neutrality, and more recently a period of general hostility."

As Dr. Greenberg implies, our growth into a recognizable industry has been marked by a parallel increase in problems of a political nature. Our world is full of paradoxes. We dare to send men to the moon, and communications is flawless. Yet New York and Washington and, I understand, other major cities are experiencing a terrible crisis in local telephone service -- a crisis to which you in the information industry have contributed, incidentally, by engulfing the telephone company in a flood of service requirements that its planners failed to anticipate.

I never fail to be thrilled by the sight of Washington as we approach National Airport from the air. And yet our enjoyment of the architectural achievements we see is marred by the knowledge of dreadful decay and degradation in the inner city that shame us with its evidences of human short-sightedness, indifference and neglect.

These are two obcious examples of how man's ability to achieve spectacular technological accomplishments is inhibited by his inability to manage and control these accomplishment. And so why should CATV be any different? We all know that the technology is there, waiting for us. But before we can begin to use it, we must break down myriad barriers of a political, economic, social and psychological nature.

Chief among these are the questions of the FCC's regulation of our industry and the resolution of our copyright position. In counterpoint to these are other important considerations such as regulation at the state and local levels, and serious differences of opinion, both inside and outside the industry, on just what future directions we should properly take.

Like you, and like anyone else brushed in any way, shape or form by either the Communications or the Copyright Acts, we suffer from the basic fact that the former was enacted in 1934 -- thirty-five years ago -- and the latter in 1909 -- a full sixty years ago. Neither is relevant to today's world. In fact, both have been hopelessly obsolete for many years. And yet, the longer Congress delays the unenviable task of passing new laws, the more difficult it becomes even to catch up with present developments -- let alone anticipate the needs of the future.

Meanwhile, the FCC has moved -- rather hesitantly -- into the vacuum created by legislative inaction. Its efforts have been misguided, we believe, because they have been predicated upon fitting CATV into the existing communications structure. That existing structure is not good enough. Furthermore, the FCC falls persistently into a trap common to government agencies -- that is, the tendency to think in terms of protecting the status quo, in this case the broadcaster, against the newcomer.

Patience is not only a virtue but a necessity in a situation such as this. Patience is not easy when one weighs the shining technological promise that we see on the horizon against the quagmire of regulatory and copyright problems that must first be bridged. But we are heartened by a conviction that the currents are running in our favor. There has unquestionably been an improvement in the attitude of members of Congress and of the FCC toward our industry. There is greater public awareness and acceptance. There is continuing affirmation, in special studies -- such as the recently-released Presidential Task Force Report and the Mayor of New York City's Task Force Report -- that CATV like sex is here to stay. Just recently, the Ford Foundation commissioned the RAND Corporation to make a detailed study of cable TV, and we hope that this will give impetus to our cause.

Meanwhile, I can assure you that we are not sitting around waiting for more reports to be issued or for Congress to act or for our opponents to give up. Our battleground is the laboratory, the factory, the political arena and the forum of public opinion. Not the least of our challenges is to find common cause with people such as you who represent present or potential users of our services.

From all that I have said, you probably have the impression that we are an industry in search of our identity, and to a large degree this istrue. As I said at the outset, quoting Dr. Pierce, we do think we know where we are going, but it is not so easy to tell when -- or even how -- we are going to get there. But, believe me, we have a lot of company in this boat.

I will try to bring this discussion into focus for you by making a few simple declarative statements -- call them predictions, assumptions or just plain wishful thinkking, as you prefer:

1. I am optimistic about a copyright settlement, although possibly not in time to pass this session of the Congress. When it comes, I think many of the regulatory problems will fall into place as side issues of the copyright question.

2. The Justice Department has indicated a strong interest in CATV as an instrument for fostering competition in the communications field, and this will help to shape the FCC's attitudes. Such competition obviously is desirable for you, for us and, most importantly, for the public.

3. There is going to be a great change in the character of what we now call the CATV industry. Inevitably, and perhaps unfortunately, there are going to be some changes in the dramatis personae. In the words of the old saying, "the strong shall survive and, I might add, -- and prosper -- and the weak shall perish." New blood, new thinking, new resources and new money are an integral part of our hope for the future.

4. The components of the CATV system of the future will include coaxial cable, microwave and/or laser or wave guide, satellites and others that may now be only a gleam in some mad scientists' eye. The result is going to be a multiplicity of channels almost infinite in number and almost infinite in potential applications.

5. CATV is going to be continuously confronted with choices -- decisions to make as to just what we are and where we are headed. We are now emerging from a period in which we have opted to be more than a passive reception service for television signals. Our first move has been toward providing various TV and information services of our own -- time, weather and news, stock information and local public service programs. Soon we must come to grips with the problem of how we are going to move from entertainment to other services and whether we are to be first and foremost originators of such services...or to become common carriers offering facilities to others...or to be a combination of both. I think a combination is the answer. One thing is certain: we cannot expect to be, nor should we want to be, the sole proprietor and arbiter of everything that goes over our many channels.

6. To some extent, we will be assisted in making these decisions by such factors as government attitudes and the requirements of users such as the information industry. To

a large degree, however, our choices will depend also upon our own vision, imagination and courage in making right -- and often bold -- moves.

7. Sooner rather than later, the composite cable-cum-microwave-cum-satellite system is going to encompass the entire nation and link us to the entire world. This is going to be an apparatus too vast in its influence and its responsibilities to be controlled by any single entity or cabal of interests. If the CATV industry should not expect to exercise such control, neither should the telephone industry nor the broadcast industry nor the information industry. It is going to take some concerted, cooperative and reasonably unselfish effort on the part of all the inter parties to achieve this goal, and the sooner we all get started, the better.

Frightening and discouraging as they sometimes are, these are wonderful times in which to be alive. In a paper contributed to the President's Task Force on Communications Policy, the Electronic Industries Association hypothesized that telecommunications will influence the direction of human society as much in the century ahead as much as growth and development in transportation has done in the past 2,000 years.

The man who first conceived the idea of synchronous communications satellites in 1945, British scientist Arthur Clarke, has said:

"What we are building now is the nervous system of mankind, which will link together the whole human race, for better or for worse, in a unity which no earlier age could have imagined."

That applies to our communications and information system as a whole, and yet, at a time when determined and inspired leadership is urgently needed in this vital area, precious little is getting done.

We are all attending this conference with half our minds while the other half is on the Apollo moon shot that is so vividly climaxing the spectacular achievements of our space program to date. Here we have an outstanding example of what commitment and imagination by government and industry, working together, can do. What we now need is an equivalent program here on earth. So much needs to be done for the betterment of mankind, but one of the first and most promising areas for concentration, I truly believe, is that of communications.

To communicate...to transmit information in a usable form to those intended to receive it...to instruct, to persuade, to influence -- surely this is central to all man's desires and aspirations.

A PROPOSAL FOR THE PROTECTION OF COMPUTER SOFTWARE

Elmer W. Galbi

I. INTRODUCTION

Attempts have been made to use the existing systems of patents, copyrights and trade secrets in order to gain legal protection for computer programs; however, the field of computer programming has certain characteristics and attributes that differentiate it from the technologies that currently fall within the scope of the existing systems. The law relative to the protection of computer programs is just developing, and it would be advantageous if the law could develop through the enactment of well-thought-out legislation aimed at solving the problem properly rather than developing on a case-by-case basis which might result in a system which has unsuitable overall characteristics.

This report was prepared in response to the Patent Office request of October 15, 1968, for suggestions as to what type system should be provided to protect computer programs. It sets out a proposal for a system that will protect and stimulate investment in computer programs. The proposed system is tailored to satisfy the special requirements imposed by the unusual charcteristics of the new art and science of computer programming. It is noted that the present law for the protection of intellectual property has special provisions to meet the requirements of areas that are not satisfactorily handled by the provisions of the general laws. For example, phonograph records are treated in a special manner in the copyright law, and asexually produced plants are treated in a special manner by the patent law. Thus, there is precedent for this type of proposal.

II. PRELIMINARY POINTS

The following preliminary points form the foundction upon which the proposed system is built:

A. Some form of protection for computer programs is desirable in order to stimulate investment in the creation of new programs and in order to facilitate the interchange of programs.

B. The majority of programs do not contain unobvious concepts but the creation of these programs can nevertheless involve a substantial investment, both of money and intellect.

C. The system must be acceptable to users, the independent software developers and the equipment manufacturers.

III. GOALS OF THE PROPOSED SYSTEM

The system proposed is designed to fulfill the following goals:

A. The system should be structured to advance the general public interest.

B. The system should provide an attractive and practical way of protecting investment in programs, compatible with the business needs of both the creators and the users of computer programs.

C. The creator of a program should run no risk of incurring inadvertent liability under this sytem.

D. The protection should be inexpensive to obtain; one should be able to obtain this protection in a timely fashion; and the system should be easy to administer.

E. The system should facilitate and encourage the timely dissemination of new concepts in order to foster a continuing advance in the state of the art.

IV. GENERAL DESCRIPTION OF PROPOSED SYSTEM

This report proposes a registration type of system which provides protection for the investment involved in creating a workable program rather than for the discovery of new concepts or new principles. Under the proposed system a registered program cannot be copied, executed, translated, etc. without the owner's authorization.

At the time of registration a copy of the program per se and a description of the concepts used in the program will be deposited with a registrar. At the option of the party who is registering a program, a detailed description of the program (e.g., detailed flow charts, etc.) may also be deposited if one wants to gain protection for this material. The registrar will maintain the program per se and the detailed description in secrecy until the end of the period of protection, but he will make public the description of the concepts. The person who registers a program may attempt to keep the registered program secret or he may divulge the program to any extent that he desires. The only examination required at the time of registration is a determination that the format of the description of the concepts is in proper form.

Unauthorized copy, translation, use or transfer of physical possession of a registered program or of the registered detailed description would subject one to liability. No liability will be incurred under this system by one who uses the published conceptual description to independently create a new program.

This proposal does not involve any changes in the patent system. Thus, the patent system will continue to exist in its present form. If someone believes he has developed a patentable concept, he may seek patent protection for that concept. He could, if he desired, also register the detailed program, providing he disclosed the concept for which patent protection had been requested. However, it is felt that the system being proposed provides a viable alternative for those seeking to protect computer programs, most of which do not involve unobvious concepts.

V. DETAILED DESCRIPTION OF PROPOSED SYSTEM

A. The following events occur at the time of registration:

1. Disclosure of Concepts: At the time of registration the originator of a program submits to the registrar a conceptual description of his program. The registrar will publish and distribute copies of this conceptual description at a nominal charge. There is no liability if someone uses this published description of concepts to write a program which does the same thing as the registered program. A definition of what constitutes a conceptual description is given in Section V.D. of this report.

2. Deposit Copy of Program Itself: A copy of the program itself must be deposited at the time of registration. (It is assumed that the registrar will establish standards for copy, probably in microfilm to make storage feasible.) The registrar will maintain the program in secrecy. The program must be a series of executable instructions. A definition of what con-

stitutes a registerable program is given in Section V.D. of this report.

3. Deposit Copy of Detailed Descriptive Material: Optionally, (if protection is desired for it) the registrant may deposit a copy of the detailed descriptive material which underlies or supports the program. The registrar will maintain such material in secrecy. A definition of what constitutes detailed descriptive material is given in Section V.D. of this report.

4. No Examination: There will be no examination at the time of registration other than to ensure that all of the required items are included and that the format is proper. The registrar will not test the program at the time of registration; however, the fact that the program was not in a language that could be executed on a computer existing at the time of registration will be a defense to an infringement charge. The fact that a program as registered has "bugs" will not invalidate the registration.

5. Oath Required at Time of Registration: A program which is registered may contain sequences of instructions which were copies from other registered programs or from other unregistered programs; however, at the time of registration an oath or declaration must be filed identifying what part of the program being registered was copied. A sequence of instructions which is so short that it is reasonably possible that two people could independently write it, need not be identified in the oath even if such a sequence is copied. Failure to identify parts of the program (other than short sequences) which are copied will invalidate the registration.

6. Fee: An appropriate fee (in the general magnitude of $100) would be established by the registrar to cover the costs of administration.

B. The following points relate to the enforcement of the rights conferred by registration.

1. Only Relatively Complex Sequences are Protectable: A registration will be unenforceable if it can be established (by testimony of experts) that the sequence of instructions is of such length and complexity

that it is reasonably possible that two people could independently come up with the same sequence of instructions. The effect of this provision is that while one can register short, simple sequences, the registration of such sequences is of no value. It is noted that a short sequence in a high level language may expand into a long sequence when compiled;however, two people could write the same short sequence which would compile into substantially the same long sequence. Thus, a fairly long sequence in object language may not meet the required level of complexity needed for protection if such a sequence was generated by a compiler starting from a short sequence in high level language.

2. The following actions constitute infringement:

a. Any unauthorized duplication of a registered program, of a registered detailed description, or of a translation constitutes infringement. (A definition of what constitutes a translation is given in Section V.D. of this report.)

b. Use of a registered program, a registered detailed description, or a translation in the preparation of another program constitutes infringement. The test is, did someone make reference to your registered sequence of instructions or to your registered detailed description as an aid in writing his own program. This would be difficult, if not impossible, to prove in individual cases, but it could probably be proven if someone did this as a regular business practice.

c. Any unauthorized transfer of possession of a registered program, a registered detailed description, or a translation constitutes infringement.

d. Causing any machine to execute either a registered program or a translation of a registered program without authorization of the owner constitutes infringement.

3. At the time of an infringement suit, the following items would be at issue:

a. Did the infringer in fact do one of the prohibited activities which are specified in paragraph 2. above? (Can be done circumstantial evidence.)

b. Does the program have the required complexity level? (Can be done by expert testimony)

c. Does the description of concepts originally deposited with the registrar meet the required standards of completeness?

d. Did the originator appropriately mark his program?

4. Remedies

a. Anyone found guilty of an unauthorized activity will be prohibited from continuing the activity and he will also be required to pay damages. (What constitutes damages is defined later.)

b. If a court finds that someone's charge of infringement or that someone's defense to a charge of infringement has no substantial basis, that party will be required to pay the other party's costs and attorney fees.

C. Miscellaneous Provisions of the Proposed System

1. Term of Protection: The term of the protection period will be ten years.

2. Hardware Embodiment: In order to prevent people from using this system to prtect hardware, the infringer must be using or copying the registered program in a form which would of itself be registerable. It is noted that in order to be registerable a program must consist of a series of machine executable instruction is given in Section V.D. of this report. It is further noted that the execution of a program which is stored in memory (including "Read-Only" memory) is an activity requring authorization.

3. Marking Requirements: The owner of a registered program has an obligation to ensure that copies carry an appropriate and evident marking that the program is registered or that he intends to register the program. A program must be registered within one year of the time that a notice of intent to register is placed on the program. Failure to mark will make the registration

unenforceable. A nonhuman readable representation of a program (e.g., a magnetic tape) must be marked on a label in human readable form, and in machine readable form on the item itself. (Note that an alternate provision with respect to marking is given later.)

4. Disclosure Prior to Registration: One may gain the protection offered by this sytem for a period of one year without actually registering a program. The protection is obtained by placing a notice of intent to register on the program and any copies that are brought into existence within that year. The purpose of this provision is to ensure that if a program becomes public within the first year of its existence, either due to the need to test the program or for some other reason, the protection is not lost.

5. Registration of Modifications to an Existing Program: Updates or modifications of a program may be registered. The registration of an update or of a modification is treated as a separate registration. Portions of an original program which are copied in an updated or modified program are identified in the oath. Anyone may use the original program when its protection period ends. If one does not register any updates or modifications during the protection period, they may also be used free when the original program protection lapses, assuming that they have been obtained in a manner which is not otherwise illegal. If one does register one or more updates or modifications during the term of protection, each package of updates or modifications will have its independent protection period.

6. Gazette: A gazette will be published with an abstract of each program which is registered and with an indication of who might be contacted for a license. The gazette will be in a form (looseleaf or machine readable) to facilitate filing by categories. The abstract will be provided by the registrant but it will be edited by the registrar. The abstract will generally be shorter than the conceptual description.

7. Distribution of Programs: The registrar will not distribute programs during the protection period, but he will sell (at the cost of reproduction) the conceptual description. At the end of the protection period, the registrar will sell printed copies of the program and of any registered detailed description (at the cost of reproduction).

8. Marketing of a Program by the Owner: The owner is free to establish whatever marketing and distribution

arrangement he chooses for his programs. It is apparent, however, that since the published conceptual description must be sufficient to enable one skilled in the art to write a program to do the same thing as the registered program, the cost of a license to reproduce or use a program will have to be less than the investment required to write a program from the conceptual description.

D. The following definitions are a vital part of the proposed system:

1. Registerable Program: Any series of machine executable instructions can be registered. The instrutions must be in a language that either (a) an existing computer can execute or (b) an existing computer plus an existing program or programs can execute. If the series of instructions is in a language that requires a computer plus a program for execution, the program required to execute the series of instructions must be a program that is capable of performing useful tasks. State differently, if the program which is being registered is in a language which must be compiled or interpreted, the compiler or interpreter must exist and must be one which can produce a useful translation or result. In accordance with the above description, programs in languages such as COBOL and FORTRAN, machine code or Micro Code, etc., can be registered. A program which has "bugs" can be registered so long as the program includes some sequence of machine executable instructions. Any form or representation of machine executable instructions is considered the same as the machine executable instructions themselves. Thus, magnetic tape and a print out are similarly treated.

2. Detailed Descriptive Material: A detailed description of a program is descriptive material which would make it reasonably possible for one skilled in the art to write essentially the same sequence of instructions as the sequence of instructions in the program which the descriptive material describes. The description or specification of the language used in a program, or the description of the input or output of a program is not part of, nor does it constitute, detailed descriptive material.

3. Description of the Concepts in a Program: A description of the concepts in a program must include a disclosure of all significant concepts which were employed in writing the program. The conceptual description should be in such terms that a skilled programmer could take the descriptive material and write a program utilizing the concepts described to do substantially the same thing as is done by the registered

program. Thus, the conceptual description would include a description of what the program does and a description of any new techniques used in the program. The amount of detail required in disclosing a concept will depend upon the novelty of the concept. For example, today one could merely say, "Use an oscillating sort routine," whereas several years ago one would have had to describe the concept involved in an oscillating sort routine.

The registrar will issue guidelines for the required format and content of the description of concepts. The test of whether the descriptive material is adequate will be one of "substantial and good faith compliance" rather than one of whether certain rules were strictly followed.

4. Translation of a Program: A translation is defined as any program which has the same sequence of instructions as the sequence of instructions in a registered program, with the exception that the instructions are now in a different language. The test is, whether there is an identity in the sequences of instructions in the two programs such that one could not reasonably come upon the new sequence without reference to the registered sequence. Thus, any program generated from a first program by a machine constitutes a translation. Furthermore, if someone looks at a program and writes a similar program in a different language, this constitutes a translation.

5. Damages: Damages shall be equal to the lesser of (a) three times a reasonable royalty or (b) the cost of independently developing the same program.

VI. ADVANTAGES OF THE PROPOSED SYSTEM OVER EXISTING SYSTEMS

A. Advantages of the new system as compared to the Patent System

1. Advantages that the originators of programs gain from the new system:

a. It is inexpensive to obtain protection under the proposed system.

b. In the proposed system the program itself may be maintained in secrecy.

c. In the proposed system all programs can be protected whereas, irrespective of how the patent law develops, under the patent law only programs which have inventive concepts are susceptible to protection.

2. Advantages that the general public obtains from the new system:

a. There is no possibility of incurring inadvertent liability under the new system.

b. In the proposed system there is an immediate disclosure of concepts.

c. The proposed system will encourage people to invest in developing programs.

B. Advantages of the new system as compared to the Copyright System

1. Advantages that the originators of programs gain from the new system.

a. In the new system the program itself and detailed flow charts are maintained in secrecy.

b. The new system specifically defines a broad scope of protection. For example, reference to a registered flow chart in order to write a program is prohibited. There is much doubt about the scope of copyright protection with respect to computer programs. The proposed system would set some definite guidelines of protection that businessmen could rely upon.

2. Advantages that the general public obtains from the new system:

a. The concepts used in progrms are specifically disclosed. If the program itself is merely registered as in the present system, one might have difficulty discerning the concept.

b. There is a shorter term of protection under the proposed system.

C. Advantages of the new system as compared to Trade Secrets

1. Advantages that the originators of programs gain from the new system:

a. Under the proposed system protection is not lost if the program or flow charts become public, whereas under trade secret law protection is lost if the material becomes public.

2. Advantages that the general public obtains from the new system:

a. The proposed system advances the public interest since divulgation of concepts is required in order to register a program.

VII. ALTERNATE PROVISIONS TO BE CONSIDERED;THESE ARE COMPATIBLE WITH THE PREVIOUSLY DESCRIBED SYSTEM

A. Concepts Secret for Two Years: The description of the concepts in a program would be provided to the registrar when a program is registered, but the registrar would keep this description secret for some period such as two years from the date of registration. This would increase the benefits which the person registering a program receives. The system would then be one where the description of the concepts became public after two years, but where the program itself (i.e., the particular sequence of instructions) would be kept secret by the registrar and protected from copying for some period like ten years.

B. Shorter Period of Protection When Concepts Kept Secret: The above provisions could be made available at the option of the person registering a program and, if he chose it, his period of protection would be made shorter. For example, if one chose to keep his concepts secret for two years after registering a program, the program would be protected for eight years, whereas if the concepts were made public at the time of registration, the program would be protected for ten years.

C. Optional Examination: Provision could be made for an examination at the time of registration to ensure that the description of concepts was adequate. This could be at the option of the party registering a program and it would have a fairly large fee attached. By having his description of concepts examined at the time of registration, one would prevent this from being used as a defense at the time he attempts to enforce the registration.

D. Alternate Type of Marking Requirements: Instead of requiring marking as proposed, one could be encouraged to mark by saying that if the infringer had notice, the damages would be twice as much as they would have been if he didn't have any notice. This would have the advantage that an infringer would be liable if he had notice, irrespective of how he received notice.

Providing Access to Information in Machine Readable Forms

Part I - Fred Ensley

I would like to address my remarks this afternoon to our practical approach to the problem of protecting data when it is in machine readable form. My company, Standard Statistics has been in the machine readable data business since the Model T days of the computer. Our service,known as Compustat, was started back in 1960 when we began keypunching data from annual reports on Standard & Poor's 425 industrial companies. The original intent of this data collection effort was to provide our analysts with some better tools for recommending stocks. However, it soon became apparent that some of Wall Street's larger institutions were interested in playing with this new toy, also. So, in 1963 Compustat entered the market place.

In the next few minutes, I would like to briefly describe our service, outline some of the protective features in our contractual arrangements with users, and briefly mention some of the ways in which we attempt to police these contracts. The Compustat data base consists of several million pieces of information. You might think of this data base in terms of a three dimensional matrix in which one edge is 20 years of information; the second edge is up to 200 data items such as sales, net income, etc, and the third edge is the 3500 companies in this file. Compustat is unique in that each data item conforms to a specific, copyrighted definition that was developed by Standard Statistics. For instance sales, current assets or net income is defined in such a way that our users will have the ability to make comparisons among all companies and all industries.

These several million items of information are packaged into nine different units and our customers may lease any unit or combination thereof. For instance, our 2700 industrial companies are broken into two major files, annual information and quarterly information. Within each of these main groups we subdivide companies into units of 900. (This magic number of 900 was arrived at several years ago when it was determined that this was the maximum number of companies that would fit on a 2400 foot real of tape at 566 bpi and it has remained at 900 ever since.) By 1972 we plan to expand this file to include 7000 companies or nearly all companies of investment interest.

The Compustat data which was initially delivered to our customers on punched cards is now delivered via magnetic tape and more recently by electrical impulses over telephone lines, i e machine to machine communication. With each advance in delivery technology it has become more difficult, so we find, to adequately protect our data.

Now let me mention some of the ways in which we attempt to protect a proprietary nature of our machine readable data base. First of all, Standard Statistics insists upon a signed agreement with anyone who has access to our Compustat data while it is still in machine readable form. We do not attempt to arrive at a signed agreement with anyone who would care to take it in hard copy. Compustat is marketed via leasing arrangements. It is not sold outright. Users are allowed access to the information for a period of time. He agrees not to transfer, assign, remove the tapes from his premises, or to make revision to the tape, duplicate the tapes, or permit others to do so without our consent. We do allow him to duplicate tapes as a normal part of good computer practices, however, the same conditions apply to the duplicated tapes as they do to the original. There are the contractual conditions when Standard deals directly with a user.

In about 1966, a third party entered the scene. It was then that we first encountered companies with the ability to allow users to interact directly with our data either in a remote batch or conversational remote. Data was thus being passed through an intermediary, still in machine readable form. At this point it becomes rather difficult to assure that our data is protected. Nonetheless, we do have agreements with time-sharing companies and here is a summary of their content: First, we continue to insist on contracting directly with the final user of our data even though he deals through a time sharing operation and may never ask for information via tapes from us. Secondly, we have an agreement with the time sharing system which states a few other points. First, time sharing agrees to protect a proprietary nature of Compustat and not to redistribute the information to anyone other than its existing users. Time sharing also agrees that each system users of Compustat will only be allowed to access that data to which he contracts directly with us. Thirdly, time sharing agrees in his contracts with his users - our customers - that the user cannot duplicate information obtained through time sharing. We therefore have contractual arrangements protecting Compustat data between Standard and the user, between Standard and the time-sharing company, and between time-sharing and the user. While this procedure may seem rather cumbersome, and I would be the first to admit that it is, we feel that it is something we must follow to adequately protect our machine readable data.

To assist in the enforcement of these protective measures, we make several other provisions in our time-sharing contracts. First we ask that each time sharing system give us the name of everyone who is using their system, and the data to which he has access. Second, we insist that time sharing show us what his monitoring system allows the user to access only at that information to which he subscribes. For instance, one of our subscribers, a utility company for instance, might only be interested in the utility file. He wants to access it through a time sharing operation. We insist that the time sharing operation prove that he can, in fact, restrict the utility company from accessing any other file.

These protective procedures assure us contractually at least that the time sharing customer is paying us for what they use and that they will not misuse what they get. The one thing that we have not truly been able to guard against is an unauthorized use of our data by someone who never subscribes directly with us for data. How do we keep these people from accessing data through a intermediary system? This is a problem we are working on. I have nothing I can tell you today except that at the present time we do have several time sharing system using our data. We have found that it is sort of a self policing operation because if one time sharing operation hears that another competitive system is allowing someone to access data without authority, he will complain to us. No, we have not had any violations that we know of. We hear of things, we check them out, but so far we have stayed out of court.

So these basically are the arrangements that we have been forced to develop over the last 6 or 7 years. We are still working on them, and we are very much interested in what the IIA can and will be doing along this line. We do feel, however, that our contractual procedures have served us well, and we have been happy with them.

Providing Access to Information in Machine Readable Forms

Part II - Dr. Eugene Garfield

Six years ago at a Symposium on "Reprography and the Copyright Law" sponsored by The American University, I gave a talk on copyright from the viewpoint of a publisher of information products and services who depended to a very large extent on new ideas and new technology for producing the products and for developing a market for these services.

Most of the remarks I made then are valid today. If I erred at all, it was in not recognizing the seriousness and intensiveness of some of the problems ISI was confronted with at that time. I tended to believe that some of the problems of proprietary rights I discussed then, while very real, were exaggerated. I know now that I underestimated the impact they would have on ISI. Our problems are the problems of the information industry. They are different and more serious to us than the problems of the publishing industry and they have been only partially understood by the publishing industry. This is why this Association was formed.

What are some of these problems I have alluded to? They are the problems of proprietary rights. They are the problems of copyright from the viewpoint of the originator of information, the repackager of information products and the user of information. They are the problems of obtaining equitable compensation for the use of information which can be freely copied or ephemerally displayed. They are the problems of access to Federal information resources. And they are the problems associated with the role of the not-for-profit professional society acting as a publisher, and often as a competitor to the commercial organization engaged in, seeking out and serving the same limited market.

Most of the things I want to discuss are the direct result of my experiences in founding and building an innovative company which, has to a large extent, depended for its growth on making rapid and effective use of modern information media, methods and technology.

The same technology that has made it possible for us to offer these new and valuable services has also caused a set of problems for us as publishers which we find very difficult to overcome. One of the most important of these problems results from the inability of copyright law to preserve our proprietary rights in our products.

Of course, I assume that all of you believe that a proprietary right is a fair right. In the area of information services, it is obtained by adding value to discrete bodies of information by reformating, reorganizing, repackaging and servicing from the data base all of ISI's products and services.

The SCIENCE CITATION INDEX is a comprehensive, multi-disciplinary index to science based on the observation that when one article cites another, there must be a subject relationship between the two articles. Processing 350,000 source items containing 4,000,000 cited references per year into a comprehensive index is by no means an inexpensive task. The extraction of the references from their sources and the reorganization and repackaging of these references into a good working tool results in value added which deserves protection, whether the corpus is offered, as a printed publication or on magnetic tape.

The well-known CURRENT CONTENTS series is a straightforward example of repackaging. While the mechanics of reproducing contents pages from selected journals is relatively simple, the acquisition process is expensive and the evaluation and selection process is complex. Many large industrial libraries have been tempted to copy the process for their own corporate users, only to find out that the process is too expensive for a limited user group. In this case, the value added is not only the repackaging and selection, but also the marketing which spreads the cost.

ASCA, the Automatic Subject Citation Alert, is an SDI service. User profiles are matched weekly against that week's accessions to ISI's data base. The value added in the data base has been mentioned earlier. New costs are acquired by ISI in order to make this service work. They are the very high costs of programming, the costs of editing and keypunching profiles, computer and print running time, mailing of references, etc. These are the values added in this case.

There are other such publications and services prepared and marketed by ISI: INDEX CHEMICUS, the INDEX CHEMICUS REGISTRY SYSTEM, CURRENT ABSTRACTS IN CHEMISTRY (January 1, 1970) and the Original Article

Tear Sheet (OATS) and the International Directory of Research & Development Scientists (IDR&DS). There is no need to detail them in this presentation. I believe I have made my point that a lot of capital, intellectual effort, organization, processing, etc., goes into providing the simplest to the most sophisticated information product. They are proprietary without question, but how can the proprietor assure himself against abuses by the user who has the technical capability readily at hand of going beyond the sales contract and duplicating the product or servicing more users than agreed to between himself and the seller?

Current copyright law and the Revision Bill do not take into account what we call in the information science profession, the secondary information services.

If there is one thing clear about our copyright law, it is that it has always had the dual objective of providing a clear-cut proprietary right to the individual or corporate author in exchange for an assurance of dissemination of his writings. The assumption was always present that the only equity damage that could be done to him would be through the publishing of a pirate edition of his work. Registration of a text with the Register of Copyrights constituted the establishment of a prima facie evidence for priority in a work which could be used in court by the proprietor at any time during the life of the copyright.

While the Government has displayed a very active interest in recent years in the dissemmination of professional information, it has not shown an equal interest in protecting the rights of the copyright proprietor of the information. The instances where it has violated the spirit and the letter of the laws should administer are many, and it is not necessary for me to list these cases to an audience that has been involved with these problems for a decade.

Infringements, for the most part in the past, were large and easily discovered. It payed a copyright owner to take an infringer to court. Successful prosecution of the case meant an injunction against the infringer and a substantial financial recovery for damages.

The technology that has made it possible to produce some of the information products I have described, has also provided the customer with the potential to easily regenerate at will what he considers the useful part of any proprietary, formated information base. Contrary to his myopic belief, his action is harmful to the copyright owner. One theme that runs through all copyright cases where the defendant has called on the doctrine of "fair use" as a defense is whether the defendants extended use of the information by copying has caused the loss of a sale or the loss of a potential sale. This concept has been captured in the Copyright Revision Bill, Section 107 -

> "In determining whether the use made of a work in any particular case is a fair one, the factors to be considered shall include:
>
> (1) the purpose and character of the use;
>
> (2) the nature of the copyrighted work;
>
> (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
>
> (4) the effect of the use upon the potential market for or value of the copyrighted work."

Factor 4 coupled with the other factors may be excellent guidelines to a court. However, I am very much afraid that they will do us, in the information industry, little good. For example, the user has the capability to easily convert a single ASCA profile into one serving many. He will always reason that he has not affected the potential market for more profiles of a certain class of users because they won't have purchased them anyway.

The specialized information products and services produced by members of this Association are quite expensive to produce. Many of the publications have a finite market. During the past few years, we have started to market our data bases on magnetic tapes as have a number of other members of the Association. This is a high-risk business. There is virtually no generalized market experience available for guidance, no established pricing or leasing formula has emerged and no standard contract fair to the seller and the buyer has been written. Each contract must be cut out of the whole cloth.

We don't really know what limits to put on the leasee's use of the tapes. For example, if he is acquiring the tapes for selective dissemination purposes, how can we decide which classes or what quantity of potential users should be served from the tapes? Should the limitation, if any, be quantitative, geographic, or according to the customer's corporate structure?

These problems are complex and we probably can take some solace in the fact that in time we shall develop enough experience to know what kind of a contract we want. However, there is, at present, no way that we can assure ourselves that the customer is limiting his use of the tapes to the terms of the contract.

Many librarians have said that the sale of a textbook, reference work or journal to a library also reduces the potential sale of any of these works to the ultimate user. In spite of this, they continue; the publisher has been anxious for the library market. They neglect to notice that the availability and accessibility to a work is limited in some inverse proportion to its popularity. Therefore, the publisher could assume, despite the availability of a text in a library, that greater popularity would produce larger sales.

The same is not true of magnetic tape data bases. The use of the data base can increase from year to year, but it doesn't follow that the proprietor can benefit from this success. Of course, he has an alternative. He can anticipate the worst case of an unlimited amount of piglets sucking at the same nipples. But how much can he charge for the pig?

Not all of our problems concerning proprietary rights have to do with what we market. Some have to do with what we should be able to acquire, format and repackage. The Freedom of Information Act specifically requires that Government information be made available on an equal basis to all who want it. The only limitations are the obvious ones: no security information, personal information, proprietary information, etc. will be made available by Government agencies. As a matter of hard fact, the so-called open information is still not available except to certain kinds of customers. I will not take the time to go into detail here, except to note that it is still a struggle for a commercial corporation to obtain Government generated, unclassified, non-proprietary and non-personal data bases. While I grant that no single corporation has an exclusive right to the Government's data bases, I think that we all should have access to them at will and that we should be allowed to repackage them in the most ingenious ways that we can for the market.

The last subject I want to touch upon is the selective support by the Federal Government of certain favored professional societies in their publication ventures. I am not against the societies. I have been on the councils of some and the editorial boards of others. I have been more than a dues-paying member of any society in which I hold membership and I fully realize their need for income. But I fail to understand why they are constantly competing - aided and abetted by the Government - with some of their members.

Of course, we do not have an unlimited proprietary right to all data bases and information packages. We certainly do have a right to any we create ourselves, and we should only have to be concerned with competition from other commercial organizations. We should have an equal opportunity of access to any Federal data base. And, at the very least, we should be allowed to compete on an equal basis with not-for-profit organizations to provide any service the Government may decide is required for the public at large.

COOPERATING WITH THE GOVERNMENT

Jeffrey Norton

Jeffrey Norton - I had wanted to suggest that we plan to close the formal part of the meeting on a high note and was therefore going to suggest that Norton Goodwin be the last speaker and I'm glad you anticipated it. Well our topic of coordinating with government and non-profit associations is about as broad and wide as you could pick. Certainly one of the best ways to cooperate with the government as far as I'm concerned is to sell'em something. That, however, is not the purpose of the discussion here. What I do want to talk to is cooperation with the government and non-profit associations in operating an information system. That's implicit in the title.

The key word here in addition to operating a system is one of cooperation and basically no one cooperates for cooperation sake. People cooperate if they think you can give them something or that you can get something from them. Each party has to contribute matters of substance and said matters of substance further have to be clearly recognized by the other party. Until such a time as both parties in almost any cooperating arrangement recognize the value of the contribution of the other they are highly unlikely to get together.

There is some historical context here having to do with the information business that's relevant to this topic. This essentially is well let me say having been in the publishing industry since just after the second World War, I think we in the industry were remiss basically and let a vacuum develop. Traditionally the publishing industry has been that part of the private sector that has served the information needs of society.

It's quite clear that new needs arose that the industry at that time did not respond to for a variety of reasons. There are many other things that were occupying their time and interests. Paper hadn't been available during the war. So after the war there were a lot of books that had to be printed and distributed. For a variety of reasons, in any event, the government identified a vacuum that needed to be filled and quite properly said its time we had better fill this need. It created systems, many of which we are still operating, and I think really performed a most necessary and valuable service. As a tax payer I can only applaude it.

What is now happening, in my own opinion, is that even the creation of this association is starting to show, that we, as a part of the private sector that wants to serve the information needs of the society, are ready to get with it. In effect we are starting to recognize some of these government sponsored programs in fact have potential for us as a business enterprise all of which brings me to the point that we recognize something of value in what various agencies and the information programs they are developing.

If you will, we recognize these agency sponsored or agency developed information services as being authors. They have something that we would, let us say, publish. We ought to mention at the same time the government agencies are starting to recognize something of value that the private sector can contribute.

They are really looking to the private sector for probably three very basic reasons and first of these I think is advertising and promotion. If I may go back to my author analogy, authors create something and the most common point you have with any author is advertising and promoting it. He wants to feel that the world knows his baby is created. He wants it mentioned and described to every potential user and customer. I think the government agency acts precisely in this case like an author. We have discussed the GPO earlier. The GPO does not see its role as one of primarily advertising and promoting a product. The agency recognizes that the private sector may be a way to get their products aired, and that's the first and most important requirement from my experience.

Secondly, they like packaging. By an large they feel they can get better design on the way it looks. Again this is not a function in my opinion of the GPO. The GPO's function is to get it out on a schedule, usually slow. Their charge is not necessarily to make it look good. Their charge is entirely different. So I think the agency feels that the private sector can enhance that.

And third and perhaps in the long run, the most important, I think that cooperating with the private sector offers a government agency potentially an avenue to making the whole program self supporting.

It seems to me that there have been enough examples of information services that have been started, very excellent ones, that have fallen victim after a few years, sometimes 10 to 12, to the vagaries of funding.

Here again an author, if I may sue the agency again as the author, has an idea, has developed the system with a great deal if himself in it and he would like to see that this product can go on even if there's a change in the funding requirements or the interests and emphasis of Congress. They are looking now to the private sector as offering potentially a way to insure continuation of their products.

And I guess I'm here because we did recently conclude a cooperative contract with one agency. I think it was innovative and I hope a precedent setting arrangement, and I'll describe that briefly.

The Office of Education is as most of you know, maintaining the ERIC network which basically is a counter part of other information systems sponsored by NIH by NASA, AEC and son on. It is primarily a system to identify, organize research information or new information in the fields so that it can be used by other researchers or the community that it is trying to serve. Most government agencies either went the route of developing the system for developing, operating and maintaining the system entirely within its staff. Some have gone to sponsored information systems in other nonprofit associations which I think Norton will talk some more about. I think what is almost unique in the rational of the Office of Education is that they would like to work with private industry.

Their goals enbodied all three of these things that I mentioned but I think quite clearly in their mind is the idea that in the long run it perhaps would be possible to eliminate what is currently several million dollars on their budget line for maintaining this network, that there couldn't perhaps come a time where the user would find this of sufficient value to pay for the operation of the system and that being the case the office would not have the cost of that operation in their budget and could do other things.

The whole program is an interesting one because during the first phase of it the Office of Education contracted first with 19 universities in as each one is specializing in a given subject area and processes the information in a particular field such as vocational education information. The information they process then goes onto a private sector firm, North American Rockwell, which has developed all the computer systems, processes, stores the data and makes abstracts of them.

The material, the physical research paper abstracted, then goes on to the National Cash Register Co. which microfilms it. The publication which indexes the research literature in the field is handled by the government printing office. The Office of Education most recently decided they wanted a companion publication to Research in Education which would index the public literature in the field. This is where we got involved. Here there was the real problem: how could they make it possible for the private sector to get the one thing that we needed.

I've spoken of the cooperation and what looked to be of value from the agencies point of view. I think it is somewhat simplier from the publishers point of view or the private sector. That, very simply, is copyright.

We need, as publishers, an exclusive license. So the problem then became for this particular effort, following a concept of the Office of Education to get as much into the private sector's hands as possible, was how to get a copyright in a publication? How could OE provide a publisher rights that would be sufficently useful to permit this private sector company to invest in advertising and promotion and do the job, etc. that they wanted done.

Fortunately they felt that this could be done by going first through the usual RFP procedure. There were several bidders that were interested in maintaining this publication and secondly by getting, I feel a Solomon's decision here from both the contracting and legal arms of the OE, that yes, the tape that was generated that would produce this publication was in fact in the public domain. Meanwhile, however, it was possible for a publisher on arrangement with the office to format that tape in a formated publication of the sort and then he could then take out a copyright on the publication and that has been done. I don't believe the GPO as an example was ever conceived other than for the service function for the legislators. Publishing, with all that means, is not its role. You almost basically defeat the whole concept of an information service if in fact you try to force it through a system which is not designed to process information rapidly and get it out rapidly. Ultimately you come to deal with the one fundamental truth in the information business which is if you have got a good information system the users will pay for it and support it. And if they won't pay for and support a good, what you think is a good information system, then it probably isn't worth keeping alive.

So I think the main thrust that the private sector can bring to this area and more and more agencies in my experience are identifying this and responding to it. By cooperating with interested private sector companies to really get into the real world where if its a good service, the user will support it and if it's not a good service they won't. It could therefore, best disappear along with many other ideas that are good ones and never quite get off the ground.

I for one am optimistic. I see many more opportunities for cooperative approach with government agencies. I think that the marriage makes tremendously good sense and I think this is becoming self evident. We in the private sector, however, have one more responsibility that we could undertake. That is that we could do a job of educating some of the agencies or some of the government groups on just the plain facts of economics of the business. That not infrequently seems to me RFP's that I've seen are often very interesting documents but there is no relationship to the real world of finance. This is important because if that RFP goes out to 15 members of the IIA and others and there is no responses because the request is one that cannot be economically justified then I'm afraid we get the response, "Well, you guys are not interested in it anyhow." I think we do have a responsibility to get the word around on what the economic realities are.

COOPERATING WITH non-profit ASSOCIATIONS

Norton Goodwin

DIRECT GOVERNMENT SUPPORT

The following statement on government support of information products and services is from the Report of the Committee on Scientific and Technical Communication (SATCOM) of the National Academy of Science-National Academy of Engineering, forwarded to the Director of the National Science Foundation in June 1969:

"....Private and government organizations have, or should have, the common objective of providing information services that are increasingly responsive to the needs of users of scientific and technical information. However, there are basic differences in the motivation and capabilities inherently identified with not-for-profit, for-profit and government organizations, and each of these types of organihas characteristics or attributes that are uniquely its own. The roles of these various kinds of organizations should be mutually reinforcing, with each being assisted in or given the opportunity to fulfill those communication functions to which it is best suited.

"The not-for-profit private organizations have a vital part to play in the communication of scientific and technical information. Such organizations include the vast array of scientific and technical societies that came into existence principally to serve the information needs of the disciplines that they represent. Because their members typically are among the principal generators and users of scientific and technical information, the societies are uniquely able to collect, assemble and assure the quality of the information that they distribute through their basic primary and secondary publications programs. And they have a widely recognized and generally accepted responsibility for assuring the continuity and progress of their particular domains of science or technology.

"The unique attribute of the private for-profit organizations in the fulfillment of their equally vital role in the communication of scientific and technical information is that their survival and growth depend directly on their ability to recognize, understand, and adequately serve users' needs. This ability has important applications in the service of both scientific and technical societies and the federal government and should be fully utilized. Such organization traditionally have been particularly effective in providing information for the practitioner and in developing specialized, highly user-oriented services, some of which are designed especially to serve the research community.

"Every government agency must support the scientific-and-technical-information activities that are required in the accomplishment of its mission. In addition, the federal government inevitably must provide substantial support, through certain of its agencies, to scientific-and-technical-information efforts in the public interest. Clearly such support cannot be extended without the exercise of responsible management and control. Minimizing the danger of conflict between such control and a ready response to the needs and views of the scientific and technical communities is a difficult task........

"The economics of information services constitutes a second major and pervasive problem area. At the present time, different mechanisms provide for the revenues and determine the market prices of primary publications and secondary awareness and access services, though both types of services are directly related to our government's massive commitment to science and technology. In the case of primary publications, the practice of allowing the payment of page charges for publication of work generated under research-and-development contracts has provided a logical distribution of responsibility between generators and users and has afforded financial stability to journals in spite of fluctuations in amount of input and number of subscribers." 1/

From the foregoing, it is reasonable to assume that not-for-profit organizations are going to continue to receive direct support from concerned government agencies. Note that the Federal Council for Science and Technology allows budgeting and payment of page charges under Federal research grants and contracts only to journals that operate on a not-for-profit basis. 2/

INDIRECT GOVERNMENT SPONSORSHIP

Tax Exemption. The SATCOM report fails to mention even more basic means whereby the government sponsors the information publishing activities of not-for-profit scientific and technical associations. Of these, the most important is exemption from taxation provided in subsection 501 of the Internal Revenue Code.

> "Sec. 501 (1954 Code). (a) EXEMPTION FROM TAXATION.--An organization described in subsection (c) ......shall be exempt from taxation under this subtitle...." 3/

Susbsection (b) of Section 501 is important to our discussion because it suggests a method whereby the competitive positions of the not-for-profit and commercial members of the information industry may be equalized in appropriate cases.

Subsection (b) provides for a tax on unrelated business income, as follows:

> "(b) TAX ON UNRELATED BUSINESS INCOME.--An organization exempt from taxation under subsection (a) shall be subject to tax to the extent provided in part II of this subchapter (relating to tax on unrelated income), but, notwithstanding part II, shall be considered an organization exempt from income taxes for the purpose of any law which refers to organizations exempt from income taxes."3/
>
> "(c) LIST OF EXEMPT ORGANIZATIONS.--The following organizations are referred to in subsection (a):
>
> > (3) Corporations, and any community chest, fund, or foundation, organized and operated exclusively for religious, charitable, scientific, testing for public safety, literary, or educational purposes......no part of the net earnings of which inures to the benefit of any private shareholder or individual......
> >
> > ......
> >
> > (6) Business leagues, chambers of commerce, real-estate boards.....not organized for profit and no part of the net earnings of which inures to the benefit of any private shareholder or individual." 3/

Note that the Information Industry Association is itself a tax-exempt trade association under Section 501(c)(6). Some of its income could be treated as unrelated trade or business income. The regulations promulgated by the Treasury Department with respect to definition of unrelated trade or business give the Information Industry Association quite a fair break in the following example:

> Example (3)
>
> "O is an industry trade association qualified for exemption under section 501(c)(6). It presents a trade show in which members of its industry join in an exhibition of industry products. O derives income from charges made to exhibitors for exhibit space and admission fees charged patrons or viewers of the show. The show is not a sales facility for individual exhibitors; its purpose is the promotion and stimulation of interest in, and demand for, the industry's products in general, and it is conducted in a manner reasonably calculated to achieve that purpose. The stimulation of demand for the industry's products in general is one of the purposes for which exemption is granted O. Consequently, the activities

> productive of O's gross income from the show--that is, the promotion, organization and conduct of the exhibition--contribute importantly to the achievement of an exempt purpose, and the income does not constitue gross income from unrelated trade or business." (emphasis added).4/

Note that the Treasury Department regulations relating to EXPLOITATION OF EXEMPT FUNCTIONS do not permit not-for-profit publisher organizations to claim exemption on advertising income even when of an informative nature, as illustrated by the following example:

> Example (7)
>
> "The facts are as described in the preceding example, except that the advertising in Z's journal promotes only products which are within the general area of professional interest of its members. Following a practice common among taxable magazines which publish advertising, Z requires its advertising to comply with certain general standards of taste, fairness, and accuracy; but within those limits the form, content, and manner of presentation of the advertising messages are governed by the basic objective of the advertisers to promote the sale of the advertised products. While the advertisements contain certain information, the informational function of the advertising is incidental to the controlling aim of stimulating demand for the advertised products and differs in no essential respect from the informational function of any commercial advertising. Like taxable publishers of advertising, Z accepts advertising only from those who are willing to pay its prescribed rates. Although continuing education of its members in matters pertaining to their profession is one of the purposes for which Z is granted exemption, the publication of advertising designed and selected in the manner of ordinary commercial advertising is not an educational activity of the kind contemplated by the exemption statute; it differs fundamentally from such an activity both in its governing objective and in its method. Accordingly, Z's publication of advertising does not contribute importantly to the accomplishment of its exempt purpose; and the income which it derives from advertising constitutes gross income from unrelated trade or business." 5/

This last example illustrates the tax treatment the Treasury Department regulations give advertising revenues of not-for-profit organizations. It shows that the competitive advantage afforded tax exempt publications is not as unfair to commercial publishing enterprises as it might be.

Government use of tax ememptions to sponsor what it feels are meretorious information activities is hardly subject to attack, and it would be difficult to disqualify the scientific and technical publications of tax-exempt organizations from their advantageous tax status. Other means of securing more equitable bases for competition between tax-exempt and commercial information enterprises should be sought.

Postal Subsidies. Government subsidy of not-for-profit publications through postal rate differentials is not as pronounced as it used to be. As of January 1, 1970 it will be still less. Even then, the second-class rate for the non-advertising portion of non-profit mailings will only be 63% of what commercial scientific journals will have to pay. On a per-piece basis the rate for non-profit scientific publications will still be a mere 25% of the charge for commercial science journals. The postal advantage is not nearly so severe where the not-for-profit science journal contains more than ten percent advertising matter.

The not-for-profit requirement for special-rate publications is spelled out in the following language from Postal Bulletin No. 20624 dated 12-28-67:

> "132.122 (c) The rates in 132.122a and b apply only to publications issued by and in the interest of the following organizations and associations not organized for profit and none of the net income of which benefits any private stockholder or individual. (emphasis supplied)
>
> a. Religious
> b. Educational
> c. Scientific
> d. Philanthropic
> e. Agricultural
> f. Labor........"

Potential F.C.C. Rate Subsidies. It is not too early for the Information Industry Association to anticipate attempts to secure electronic communications rates subsidizing information products and services on a not-for-profit basis.

Copyright Anomalies. The government's objective in granting postal subsidies is clearly to sponsor the flow of information in what it feels to be particularly meretorious fields. The same is true of the government's objectives in affording tax exemptions to the same classes of organizations. The exercise by these same exempt, favored organizations of a copyright monopoly which implies an attempt to restrict the flow of the same sponsored information to their own advantage and profit creates a situation that is both anomalous and embarrassing.

The anomaly is obvious. The embarrassment comes when the not-for-profit publishers are advised by counsel of the detailed steps they would have to take to perfect copyrights in the journal articles they publish.

Most non-profit journal articles are published with a blanket copyright notice on the title page only. This avoids embarrassment. The technical requirements to perfect copyright in a journal article published under such a blanket copyright are prodigious. Unless the publisher has obtained from the author an assignment of all literary property and other rights to the article, including complete publication rights and the right to copyright the same organization's name prior to publication, the blanket copyright notice has no effect with respect to the individual article. Under present copyright concepts, only an author or a proprietor of a work may obtain copyright protection.

To a large extent, the not-for-profit scientific and technical societies and the commercial organizations that may do their publishing for them have avoided the embarrassment of asking for assignment of all literary rights. They have relied instead on what they claim is a generally accepted "trade" custom in the scientific and technical publishing field. It is their contention that when an author submits an article for publication in a scientific or technical journal in response to a *Notice to Authors* stating or implying that the author is not to submit the same paper to other publications, submission of a paper constitutes a binding assignment of all literary property and other rights to the article in question, including complete publishing rights and the right to the article in question, including complete publishing rights and the right to copyright the same in the name of the organization sponsoring the publication. In the case of not-for-profit publications, the proposition has never been tested. But in the case of *Kinelow Publishing Company* vs. *Photography in Business, Inc*. *et al*, 270 F. Sup. 851 decided in the Southern District, New York, 1967, the Plaintiff claimed the existence of an analogous trade custom. The Court found the trade custom non-existent and the witnesses introduced to prove it incredible. The Court noted: "It has long been recognized that a general or 'blanket' copyright in a periodical does not protect rights in a specific article contained therein unless copyright privileges or a proprietary right have been previously assigned to the publisher." In the vast majority of articles appearing in scientific and technical journals published by not-for-profit organizations, there is no evidence of an assignment of copyright privileges or proprietary right prior to publication. Under present copyright law the lapse is fatal. Where a work is first published without copyright, there is a dedication to the public domain so that copyright cannot later be claimed in a subsequent publication. This principle reaffirmed in the case of *Goodis vs. United Artists TV, Inc. et al*, 370 F. Sup. 122, decided in the Southern District, New York, 1968.

The two cases, taken together, raise serious questions as to the proprietary status of a major part of the primary scientific and technical literature. These uncertainties do not help promote the flow of information. If, as has been suggested, the copyrights of the American Chemical Society in its journal publications cover the title pages but may not extend to the individual articles they contain, the doubts remain.

Uncertainty as to proprietary rights in information products inhibits the flow of information and the operation of advanced information transfer systems almost as effectively as enforceable exclusive rights. It is clearly not in the public interest to tolerate a system of proprietary rights in which even the knowledgable cannot determine with certainty which parts of a publication are subject to enforceable proprietary rights and which are not.

If the Information Industry is to realize for the public good the full potential of advanced technologies for alerting the patron as to what relevant information has been published, and for transferring to him what he selects, uncertainties of this kind must be eliminated. One way of doing so is to provide a limited type of copyright to not-for-profit publishers that would simplify the problems of perfecting such copyrights, would adequately secure the publisher from unfair uses of his products and assure him for a limited time, say 10,000 days (about 27 years) of an accounting and a statutory fee for each particular use. Proposals along these lines have been developed elsewhere.6/

Of particular interest in this connection is the proposal Zurkowski has made for a two-stage copyright monopoly. In his paper on Post-Gutenberg Copyright Concepts,7/ he has conceived of a type of copyright affording a higher degree of copyright protection immediately after first publication than that available during the remainder of the life of the copyright. I suggest that this is a concept of great potential value in the information industry where, for many products, a relatively short lead time is all that is required to eliminate certain types of unfair competition, and where the public interests are better served by more liberal access thereafter.

In a limited copyright concept subjecting the registered work to compulsory licensing, Zurkowski suggests that there may be an initial period during which multiple copymaking would be prohibited notwithstanding a compulsory license to make on-demand individual copies available throughout the remainder of the life of the copyright.7/

The foregoing copyright suggestion is in the tradition of granting exclusive rights to authors and their assignees. It merely suggests that in the case of works of authorship contributed for publication to tax-exempt organizations, traditional but more limited exclusive rights are all that the author should be able to assign, but that the formalities for transfer of the right to secure copyright should be less rigorous. It is proposed as mandatory in the case of tax-exempt publications, and is an optional alternative to traditional copyrights in all other cases.

The other suggestion that Zurkowski has made, that of copyright in the form in which a communication is published is a format copyright, a marked departure from the traditional view of copyright as an author's rights.8/ It is nevertheless important to consider at this time the future availability of such rights to not-for-profit organizations in the information industry.

The idea of format copyright is as independent of author's rights as is the kind of copyright in typography secured under the provisions of Section 15(1) of the Copyright Act of 1956 of Great Britain. Under this concept, it is the entrepreneur's packaging and formatting effort that is protected regardless of who authored the communication, whether or not it was ever in the public domain, or whether it is uncopyrightable by reason of being, in content, a Government publication.9/

In the opinion of many, some sort of format copyright is going to have to be provided before works become generally available in forms that permit economical facsimile transfer and/or microduplication. The question that the Information industry ought to start studying at this time is whether not-for-profit organizations ought to be permitted to enjoy the same format copyright privileges as commercial information processors. The answer to this question requires an insight into means for preventing the reformatting activities of Government agencies, such as the National Library of Medicine, from competing unfairly with commercial reprocessors.10/ The problem in that case is to make sure that the price the consumer must pay for access reflects reformatting costs paid out of public funds.

Public law now requires that the Government Printing Office charge for books and periodicals offered for public sale a price that reflects the cost plus ten per cent. The proceeds are paid into the General Funds of the Treasury. I suggest that in the case of fees for the right to reproduce or otherwise use materials reformatted by Government agencies, such fees should not be paid into the general fund of the Treasury, but rather be paid to the Copyright office to help defray the added expenses of registration and accounting services that the new information age will undoubtedly require of the Register's Office.

I suggest that neither Government nor not-for-profit organizations ought to be barred from reformatting information products and registering them in a system of permissions and payments that will produce royalties. As to proceeds from the reformatting activities of the Government, I have suggested that they be paid to the Copyright Office. As to royalty income to the private sector from such products, it would be inequitable to treat the same kind of income as taxable to those who produce information products for profit, and as tax exempt to others. Accordingly, I suggest that any royalty income realized by tax-exempt organizations from rights to receive payments for the use of data bank entries secured by format copyrights be treated as unrelated business taxable income.11/

RECAPITULATION

We have shown that the information products and services furnished by not-for-profit organizations are held in high regard, and that tax-exempt publications can be expected to continue to enjoy direct government subsidies as well as preferred tax and postal treatment. We have also shown that these same organizations find themselves in an anomalous position when they attempt to exercise a copyright monopoly in a way that restricts the flow of the very information they have been subsidized to make freely available. We have also suggested that this anamalous situation has been so embarrassing that instead of demanding the necessary full assignment from contributing authors and their employers, they have, instead, relied on an inferential assignment and the hope that, if put to the test, the courts would accept the fiction of a "trade" custom in lieu of formal assignment of copyright. We have noted that recent court decisions indicate that journal articles not covered by specific formal assignment prior to publication under a blanket copyright are dedicated to the public domain. We suggest that the resulting uncertainties regarding the copyright status of works of authorship contributed to and published by not-for-profit organizations is not in the public interest, and that a simpler, more limited copyright in such works should be provided by statute. We have also indicated the need for rights analogous to copyrights in format, and have suggested that it would not be in the public interest to bar not-for-profit organizations from enjoying royalties from such format copyright, provided such organizations are required to treat the royalty income from such property as taxable unrelated business income.